The Mefo Bills and the Economy of Nazi Germany

Shadow Financing, Rearmament, and the Seeds of Economic Instablity

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Executive Summary

What were Mefo bills?
Mefo bills were off-budget promissory notes (4% interest, up to five-year term) issued via the shell company **Metallurgische Forschungsgesellschaft (MEFO)** and guaranteed by the German state. Contractors in the armaments sector were paid in Mefo bills, which commercial banks could discount and the **Reichsbank** would rediscount—quietly injecting liquidity while keeping the costs of rearmament outside the official budget.

Why did they matter?
They enabled Nazi Germany to **rearm rapidly without immediate tax hikes, visible bond issuance, or international scrutiny**. By decoupling spending from the published fiscal accounts, the regime gained time to rebuild the Wehrmacht and reorganize industry before formal wartime finance began.

Key figures (1934–1938):

- **~RM 12 billion** cumulative issuance.
- Annual flows rose from roughly **RM 2.1bn (1934/35)** to **RM 4.0–4.5bn (1937/38)**.
- Implied scale reached **~6–9% of GDP per year** at peak (est.), with Mefo finance covering **~one-third to one-half** of rearmament outlays in some years (est.).
- **1938:** issuance halted; rising maturities forced a switch to **Reichsschuldenverwaltung** bonds and overt deficit finance.

How did it end?
As maturities accumulated and rearmament accelerated, pressure to redeem bills mounted. From 1938, the state shifted to **conventional public debt**, and legal caps on money creation were loosened (1939), folding Mefo's "shadow money" into an openly militarized, command-style economy.

Bottom line
Mefo bills were a **bridge instrument**: a deliberately opaque credit machine that **converted off-budget promises into real resources**, buying the regime critical years to rearm. The eventual pivot to on-budget debt and tighter controls underscores the core lesson: **creative accounting can mobilize capacity quickly, but it stores up liquidity and credibility risks that arrive all at once.**

> **Legend:** Left band = key political milestones; right band = financing moves (job-creation, MEFO start/peak/stop, shift to bonds).

Year	Political band	Financial band
1933	**Jan 30:** Hitler appointed Chancellor. **Feb 27:** Reichstag Fire → **Feb 28:** Decree suspends civil liberties. **Mar 23:** Enabling Act. **Jul:** One-party state formalised.	**Mar:** Schacht returns to lead Reichsbank. **Apr:** Cabinet carves out military from ordinary budget controls. **Jun 1:** Law for the Reduction of Unemployment (Reinhardt program) kicks off credit-funded public works.
1934	**Jun 30:** Night of the Long Knives consolidates power. **Aug 2:** Hindenburg dies; Hitler becomes Führer.	**Apr–May: MEFO** (Metallurgische Forschungsgesellschaft m.b.H.) created; **Mefo bills** begin; off-budget armaments payments commence.
1935	**Mar:** Conscription reintroduced; rapid rearmament signalled.	Fiscal transparency curtailed as published expenditure detail is reduced; Mefo usage scales up; 4% coupon and five-year maximum maturity standardised.
1936	**Mar:** Remilitarisation of the Rhineland. **Sep: Four-Year Plan** announced; Göring named Plenipotentiary for the war economy.	FX/allocation controls tighten; armaments priority becomes economy-wide rule. **Mefo issuance accelerates** (on path to mid-decade peak).
1937	**Nov 5:** Hossbach Memorandum (war aims outlined); elite reshuffle begins.	Schacht warns of inflation/rollover risks; partial tightening while **Mefo rollovers continue** and stock mounts.
1938	**Mar:** Anschluss (Austria). **Sep:** Munich Agreement. **Nov:** Kristallnacht.	**Early: New Mefo issuance stops**; regime **shifts to overt bond finance** via Reichsschuldenverwaltung; bond placements show market strain as official debt rises.
1939	**Mar:** Occupation of Bohemia–Moravia. **Sep 1:** Invasion of Poland; Britain/France declare war.	**Jun:** Reichsbank statute revised—formal constraints on money creation removed; **overt war finance** (bonds, forced savings, clearing arrangements) replaces transitional Mefo system.

> **Notes:** Dates are month-level where material; finance band aligns with your series and tables. For sources and transformation choices, see **Appendix B — Data Provenance & Transformations** and the figure-level captions in **Appendix C**.

Limits & Uncertainties

> Why some numbers appear as **ranges** and some series are flagged **illustrative**.

- **Exchange controls & administered rates (1934–39).** Capital controls, multiple exchange rates, and bilateral clearings distort **RM→USD/€** conversions; market quotes often diverged from official parities. Where relevant, we show **bands** (e.g., FX ±10–20%) rather than a single point.
- **Price administration & "repressed" inflation.** Wide-ranging price/quantity controls mute CPI signals; official CPI likely **understates true scarcity**. Real-term conversions therefore include **CPI/deflator sensitivity** (±10–20%).
- **Shadow finance opacity.** Off-budget instruments (e.g., **Mefo bills**) were **not fully disclosed** after 1935; maturity rolls and rediscount volumes are reconstructed from archival fragments. Reported **stocks/flows** may be **interval estimates**.
- **Series comparability.** GDP levels, sectoral shares, and money aggregates vary by source (Maddison, Destatis, secondary literature). We resolve conflicts by **triangulation** and document transformations (rebasing, deflation, splicing).
- **Timing & classification.** Some events are dated by **authorization** vs **cash effect** (order vs payment). Where the split matters, we annotate with footnotes and show **cumulative ranges**.

How we mitigate:
(1) disclose sources/transformations in **Appendix B — Data Provenance & Transformations**;
(2) include **Methodology Appendix — Conversions & Sensitivity** with CPI/FX/PPP tests;
(3) mark charts/tables with **"Source(s)" and "Notes"** (nominal vs real; illustrative where indicated).

Master Glossary (A–Z)

A

- **Administered exchange rate:** A currency rate set or tightly managed by the state rather than by a free market.
- **Akzept und Garantiebank (1931):** Emergency “Acceptance & Guarantee Bank” created to stabilise distressed German banks.
- **Armament firms:** Private manufacturers supplying the Wehrmacht (e.g., Krupp, IG Farben, Rheinmetall, Siemens, Vereinigte Stahlwerke).
- **Aufrüstung (Rearmament):** State-led military build-up in Nazi Germany after 1933.
- **Autarky:** Policy of economic self-sufficiency to reduce reliance on foreign trade/finance.

B

- **Base money (monetary base):** Central-bank liabilities (currency + bank reserves); expanded via rediscounting of MEFO bills.
- **Bullet maturity:** Debt structure where principal is repaid in full at final maturity.
- **Buna (synthetic rubber):** IG Farben product used to cut import dependence.

C

- **CDO (Collateralized Debt Obligation):** Tranche-structured credit product; cited as modern shadow-finance analogue.
- **Clearing accounts:** Wartime book-entry balances between Germany and occupied countries; obligations accumulated and were not settled.
- **Consumer Price Index (CPI):** Price index used for inflation adjustments into present-value terms.
- **Creative accounting:** Use of accounting flexibility/structures (e.g., off-budget, off-balance-sheet) to alter the fiscal picture.
- **Currency/Rate “conversion” (universal conversion):** Coercive interest-rate policy that pushed long rates down (~4.5%) by restricting collateral/trading eligibility.

D

- **Dawes Plan (1924):** Loan-backed reparations stabilisation tying Germany to US capital inflows.
- **Debt monetisation (monetisation of debt):** Financing obligations by creating base money (directly or via rediscount).
- **Deflation (1930–33):** CPI decline in early Depression years.
- **Destatis (Statistisches Bundesamt):** Federal Statistical Office of Germany.
- **Discounting (bank):** A bank’s purchase of a bill/IOU from a firm at a discount, providing immediate cash.

E

- **Early redemption option:** Feature allowing a bill/bond to be settled before final maturity.
- **EFSF / ESM:** EU crisis vehicles (SPV-like) used as modern, regulated off-budget funding channels.
- **Enabling Act (Ermächtigungsgesetz, 1933):** Law empowering Hitler's cabinet to legislate without the Reichstag.
- **Exchange controls:** Administrative restrictions on FX use, payments, and transfers.

F

- **Façade (figurative):** Outward structure concealing a programme's true purpose/scale.
- **Four-Year Plan (Vierjahresplan, 1936):** Göring-led programme to ready Germany for war and push autarky within four years.
- **Forced placement:** Non-market placement of public debt with domestic institutions under explicit/implicit pressure.
- **Foreign-exchange allocation:** Administered rationing of scarce FX via permits/quotas.
- **Full employment:** Near-universal employment; further stimulus risks price pressure over output gains.

G

- **GDP (Gross Domestic Product):** Output measure used for Mefo/GDP ratios and scaling.
- **GDP deflator:** Price index converting nominal to real GDP.
- **General Plenipotentiary:** Holder of sweeping powers to execute the Four-Year Plan (e.g., Göring).
- **Gosplan:** USSR central-planning agency; a non-market "parallel" to fiscal devices.
- **Guarantee (state/implicit):** Explicit or presumed sovereign backstop lowering private risk.
- **Guns before butter (Kanonen statt Butter):** Slogan signalling priority of armaments over consumption.

H

- **Hjalmar Schacht:** Reichsbank President/Economics Minister; architect of the MEFO mechanism.
- **Hyperinflation (Germany, 1923):** Collapse of purchasing power that shaped later aversion to overt money printing.
- **Hossbach Memorandum (1937):** Record of Hitler's strategic war aims meeting.

I

- **IG Farben:** Chemical/industrial conglomerate central to synthetic inputs for rearmament.

- **Implicit guarantee:** Market belief that a state/sponsor will step in during stress.
- **Institutional borrowing channel:** Raising funds from regulated investors (banks/insurers/pension funds) rather than the central bank.
- **IOU (I Owe You):** Informal promissory claim; Mefo bills functioned as state-backed IOUs.

K

- **Kanonen statt Butter:** See **Guns before butter**.
- **Krupp:** Major armaments producer and emblematic participant in the Mefo cycle.

L

- **Law for the Reduction of Unemployment (1933):** Job-creation law (Reinhardt programme) funding public works/tax reliefs.
- **Lebensraum:** Ideology of territorial expansion for “living space.”
- **LGFV (Local Government Financing Vehicle):** Chinese off-budget issuer funding infrastructure under implicit public backing.
- **Liquidity pressure / strain:** Cash/reserve stress from maturing paper or expanding rediscounting.
- **Long Knives, Night of the (1934):** Purge consolidating Nazi power.

M

- **Machtergreifung (“Seizure of power”):** Nazi consolidation of authority in 1933.
- **Maddison Project Database (MPD):** Long-run historical GDP/CPI estimates used for benchmarking.
- **MEFO (Metallurgische Forschungsgesellschaft m.b.H.):** Shell company issuing Mefo bills; off-budget conduit.
- **Mefo bills (Mefo-Wechsel):** State-guaranteed promissory bills (4% coupon; rollable to five years) paid to armaments firms; discountable/rediscountable.
- **Monetary base / Money supply:** Base = currency + reserves; money supply = broader stock (currency + deposits).

N

- **Neue Plan (New Plan, 1934):** Schacht’s trade/FX regime to stabilise external balances via controls and bilateral clearing.
- **Nominal vs real values:** Current-price terms vs inflation-adjusted values.
- **Notes (figure-level):** Figure captions specify nominal/real, illustrative vs estimate, and sources.

O

- **Off-balance-sheet financing:** Keeping liabilities outside formal financial statements (e.g., SPVs).
- **Off-budget / On-budget:** Expenditures outside the voted budget (Mefo cycle) vs recorded in fiscal accounts (redemption).
- **Opacity (statistical/fiscal/monetary):** Deliberate non-disclosure/under-reporting to mute scrutiny.

P

- **Para-bureaucracy:** Extra-ministerial agencies executing the Four-Year Plan.
- **PPP (Purchasing Power Parity):** Conversion using relative price levels; used in sensitivity checks vs FX.
- **Price administration (controls):** Limits on prices/quantities to suppress visible inflation.
- **Promissory note:** Written promise to pay; legal form underpinning Mefo bills.

R

- **Rationing:** Administrative limitation of civilian consumption/inputs.
- **Reconstruction Finance Corporation (RFC):** US New Deal lender; on-budget, transparent state credit conduit.
- **Rediscounting (Rediskontierung):** Central bank buys previously discounted bills from banks—injects reserves/base money.
- **Reichsbank:** German central bank; guarantor/rediscount window for Mefo bills.
- **Reichsbahn / Reichspost:** State railways/post; tapped for cash/overdraft backstops.
- **Reichsmark (ℛ𝓜 / RM):** German currency (1924–1948).
- **Reichsschuldenverwaltung (RSV):** Reich Public Debt Administration issuing conventional bonds/T-bills from 1938.
- **Reichswehrministerium:** Defence Ministry placing procurement orders that drove the Mefo pipeline.
- **Repo (Repurchase Agreement):** Short-term secured borrowing; modern liquidity analogue.
- **Repressed inflation:** Price pressures masked by controls/rationing/shortages.
- **Rheinmetall / Siemens:** Key industrial participants in defence procurement.
- **Rollover (maturity extension):** Extension/renewal of bills to defer cash redemption.

S

- **SA (Sturmabteilung):** Nazi paramilitary; its neutralisation in 1934 aided regime consolidation.
- **Schacht, Hjalmar:** See **Hjalmar Schacht**.
- **SIV (Structured Investment Vehicle):** Off-balance-sheet conduit funding long assets with short paper.

- **SPV (Special Purpose Vehicle):** Ring-fenced legal entity isolating assets/liabilities; may obscure public liabilities.
- **Statutory revision (June 1939):** Change to the Reichsbank law removing formal constraints on money creation.
- **Stock vs flow:** Outstanding level of bills/debt vs period issuance.
- **Supplier credit:** Deferred payment to suppliers against bills rather than cash.

T

- **Territorial cessions:** Loss of territories (e.g., Alsace–Lorraine) reducing resource bases.
- **Treaty of Versailles (1919):** Settlement imposing reparations and military-industrial limits on Germany.
- **Treasury bill (T-bill):** Short-term sovereign paper issued on-budget with audit/disclosure.
- **Token capital:** Minimal share capital used to incorporate MEFO (RM 1 million).

U

- **Universal conversion (rate policy):** See **Currency/Rate "conversion."**
- **Unemployment programmes (Reinhardt):** Job-creation credits launched in 1933; a precursor to Mefo finance.

V

- **Vereinigte Stahlwerke (United Steel):** Steel combine central to heavy-industry rearmament.
- **Vierjahresplan:** See **Four-Year Plan**.
- **"Wirtschaft als Waffe" (Economy as a weapon):** Doctrine treating economic policy as a war instrument.

W

- **War guilt clause (Art. 231):** Versailles clause providing legal basis for reparations.
- **Wehrmacht:** Unified armed forces of Nazi Germany (1935–1945).
- **Weimar Republic (1919–1933):** Pre-Nazi German state; its crises shaped later policy aversions.
- **Working capital:** Short-term cash for operations, provided to firms via discounting of Mefo bills.

Y

- **Young Plan (1929):** Reparations revision extending timetable and foreign-credit dependence.

Chapter 1. Introduction

Section 1.A - Aim of the study:

> **"The best way to control a state is to control its finances."**
> *— Hjalmar Schacht*

Economic history often hides discoveries that resemble scenes from a thriller—secret deals, shell companies, and stratagems that, though invisible on the surface, set entire mechanisms in motion. A case in point is the famous **Mefo bills**, a financial contrivance that allowed the Nazi regime to fund Germany's rearmament without recourse to ordinary procedures and without arousing international concern—at least at first.

This study seeks to shed light on this dark yet compelling chapter of economic history. It is not merely a technical analysis of a mechanism, but an attempt to understand **how economic creativity can become an instrument of political strategy**, how the art of accounting turns into a vehicle for historical developments.

Through the search for historical evidence, the analysis of figures and their conversion into contemporary values, the study aims to trace the thread that links an apparently "harmless" bill of exchange to the war machines of the Second World War. The Mefo bills were not simply a means of finance; they were the façade of an entire programme that concealed a design of conflict and domination.

By studying them we seek to answer not only the "how" but also the "why": why a state resorts to such devices, where the limits of accounting ingenuity lie, and when a financial contrivance becomes a political instrument.

Section Glossary — 1.A Aim of the study

- **Façade (figurative):** Outward appearance concealing a programme's true purpose/scale.
- **Financial contrivance:** Purpose-built financing arrangement used to achieve policy goals discretely.
- **MEFO (*Metallurgische Forschungsgesellschaft*):** Shell company that issued/channeled Mefo bills outside the formal budget.
- **Mefo bills (*Mefo-Wechsel*):** Off-budget promissory bills (1934–1938) used to finance Nazi rearmament while deferring monetisation and scrutiny.
- **Rearmament (*Aufrüstung*):** State-led military build-up that the mechanism served.
- **Shell company:** Legal entity with little/no operations used to route transactions or obscure the originating party.

Section 1.B - Methodology:

> **"It is not the numbers that tell the truth; it is how you read them."**
> — *John Kenneth Galbraith, economist

This study attempts to combine historical analysis with quantitative assessment so as to provide a fuller picture of the Mefo bills phenomenon. The methodological approach rests on three main pillars:

1. **Historical Documentation:** Drawing on primary and secondary sources, we examine the conditions under which the Mefo bill system was designed and implemented. Particular emphasis is placed on historical economic works, memoirs (such as those of Schacht), and official documents of the period.
2. **Economic Conversion to Present Values:** To gauge the real significance of the sums channelled via Mefo bills, we use inflation-adjustment tools. The main method is the application of the Consumer Price Index (CPI) to compute the equivalent value in today's euros, while we also compare against Germany's GDP then and now.
3. **Graphical and Numerical Presentation:** Results are presented in charts and comparative tables to depict clearly the scale of the mechanism's influence both on the economic environment of the time and on its hypothetical projection into the present.

The method adopted is not confined to a simple description of a financial mechanism. Rather, it seeks to identify the ways in which an accounting device can conceal political aims, distort the fiscal picture, and ultimately contribute to broader historical shifts.

From this vantage point, the study serves as a bridge between economic history and a critique of accounting practice, seeking not only what happened but what it means.

> See: **Appendix A — Methodology Conversions & Sensitivity** for conversion assumptions and sensitivity ranges.

Section Glossary — 1.B Methodology (minimal)

- **Accounting device:** Mechanism in public accounts that can mask or reclassify obligations, shaping perceptions of fiscal reality
- **Consumer Price Index (CPI):** Inflation measure used to convert past sums into present-value equivalents.
- **GDP comparison (then vs now):** Benchmarking historical amounts against Germany's GDP of the period and today to gauge scale.
- **Memoirs (e.g., Schacht):** First-person accounts used as contextual primary evidence.
- **Primary vs secondary sources:** Original records (laws, official documents, contemporaneous data) versus later analyses/interpretations.
- **Quantitative assessment:** Use of numerical methods alongside historical analysis.

Section 1.C - Brief overview of the topic:

The story of the **Mefo bills** is one of ingenuity and political strategy, showing how Nazi Germany exploited financial tools to fund the country's rearmament without provoking international reactions. Through the establishment of a **fictitious company**, the **Metallurgische Forschungsgesellschaft** (*MEFO*), securities were issued that financed military expenditure in a way that bypassed the stringent fiscal parameters of the time.

The significance of these securities goes beyond a mere financial transaction; they are a textbook example of a political-economic strategy that couples the need for armament with the construction of a virtual fiscal system. Studying the Mefo bills allows us to understand the innovative methods the Nazi regime used to circumvent its economic difficulties while concealing its true intentions from the rest of the world.

This system amounted to a kind of financial "cookery" that enabled the government to remain in power and to prepare its foreign policy without immediately revealing the extent of its military ambitions. The present study seeks to analyse this system in its economic, political, and historical dimensions, focusing on how it operated, what its results were, and what its present-day implications are for our understanding of the history of the Second World War.

Section Glossary — 1.C Brief overview of the topic

- **Financial "cookery":** Informal term for using accounting/financial tricks to make policies look different from their reality.
- **Securities:** Tradable financial instruments (e.g., notes/bills) used here to channel funds to military spending.
- **Virtual fiscal system:** Arrangement that mimics a budget system outside official state accounts to hide the scale/purpose of spending.

> See earlier definitions: **Mefo bills**, **MEFO**, **Shell company** — in *Section Glossary — 1.A Aim of the study*.

Chapter 2. Historical Context of Germany (1933–1934)

Section 2.A - Economic situation after 1929

> **"The Depression hit Germany like a tidal wave."**
> — Overy *(Overy 1994)*

Germany's economic situation after 1929 was profoundly shaped by the Great Depression. The 1929 crash was not merely an economic disturbance; for Germany it dealt the final blow to an already fragile economy. The country depended heavily on the inflow of American capital through the Dawes Plan (1924) and the Young Plan (1929) *(Tooze 2006)*, which had secured the payment of reparations while sustaining a minimal level of growth. When American financing was cut off almost immediately after the stock-market crash of October 1929, the Weimar economy collapsed like a house of cards.

Unemployment surged dramatically, and the financial system faced crises, as evidenced by the creation of the **Akzept und Garantiebank** in 1931 *(James 1986)* to support distressed financial institutions. Banks suffered massive withdrawals, industrial output fell by 40% (*Tooze 2006, pp. 42–45)*, and social discontent intensified. Many Germans faced hunger, homelessness, and widespread despair. The republic was losing legitimacy, while the extremes—right and left—steadily gained ground.

The government adopted various measures to confront the crisis. Reinhardt, Undersecretary at the Reich Finance Ministry, stated that the government aimed for economic recovery with minimal policy intervention, though he acknowledged the necessity of certain state measures *(Barkai 1990, p. 33)*. Even so, a trend toward a **more interventionist economic administration** had been developing since the end of the First World War.

Efforts to combat unemployment included **job-creation programmes**. The **Law for the Reduction of Unemployment** of 1 June 1933 was intended to address the problem *(Overy 1994)*. There was also debate about solving unemployment through public works.

The Nazi seizure of power in 1933 brought deep government influence over the economy. **Hjalmar Schacht** played a significant role in the early years, and the bureaucrats of the Reich Finance Ministry later recalled this period with sympathy *(Tooze 2006, pp. 79–80)*. In a speech to the Reichsbank assembly on 7 April 1933, Hitler affirmed his commitment to avoid experiments with the currency *(Domarus 1981)*.

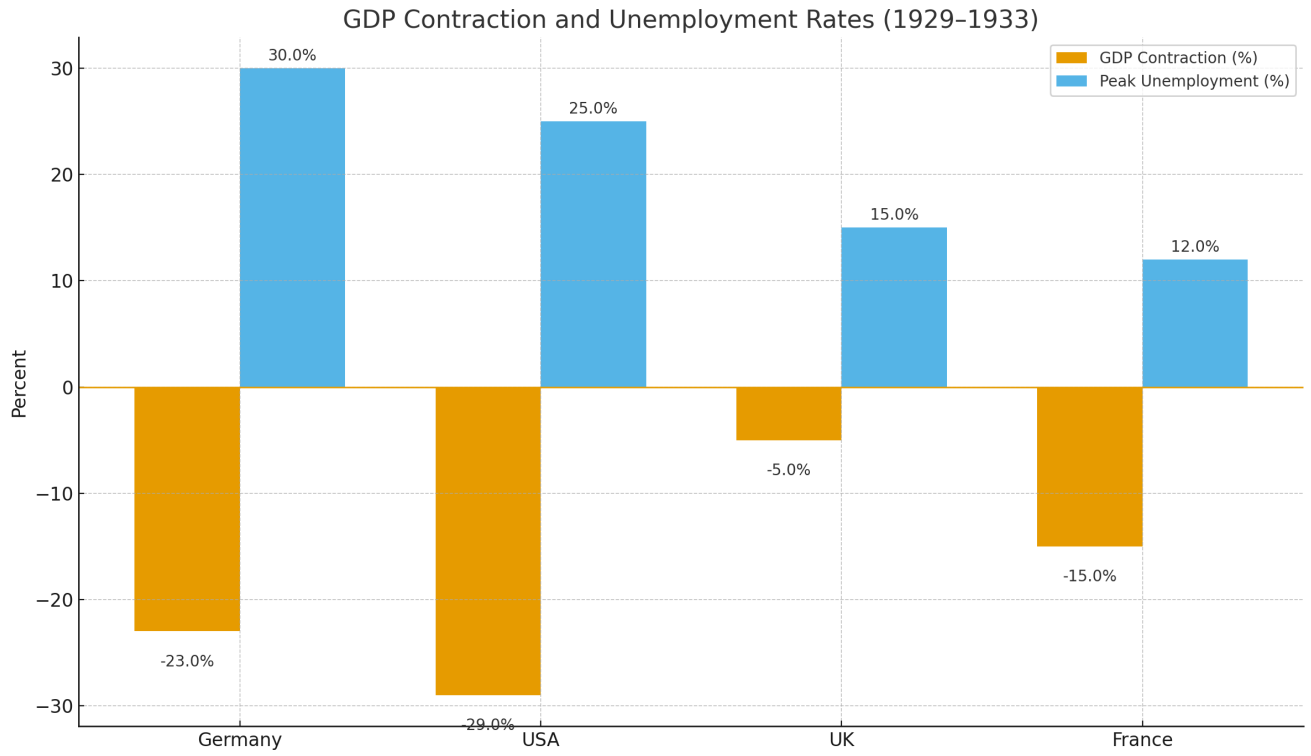
Rearmament became a major driving force of the economy after 1933. National-Socialist economic policy increasingly turned toward war preparation. Investment spending—especially the rebuilding of inventories—contributed to the recovery. Yet the post-1933 rise in consumption was largely confined to capital goods and government expenditure *(Barkai 1990, p. 67)*.

By the late 1930s the economy was ever more focused on military build-up. The **Four-Year Plan**, launched in 1936, aimed to ready Germany for war *(Tooze 2006, pp. 134–137)*. By 1939, as war loomed, the government implemented measures to finance the war effort, including **rationing to curb consumption** and channelling resources into military needs. Despite some “minor complaints,” there was no widespread serious discontent among the German population, which had grown accustomed to privation.

Statistical series from 1928 to 1938 show trends in unemployment, underemployment, public expenditure, armaments spending, and debt *(Maddison Project Database)*. Wages, earnings, and the cost of living are also tracked up to 1940. These indicators reflect the dramatic economic shifts of the period—from the depths of Depression to a recovery driven by rearmament and the early stages of war mobilisation.

The chart below conveys the severity of the slump by showing the overall percentage drop in GDP and peak unemployment in four major countries.

Chart 1. GDP and Unemployment



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

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Section Glossary — 2.A Economic situation after 1929 (minimal, A→Z)

- **Akzept und Garantiebank (1931):** Emergency "Acceptance and Guarantee Bank" used to stabilise distressed banks.
- **Dawes Plan (1924):** Loan-backed reparations stabilisation tying Germany to US capital inflows.
- **Four-Year Plan (1936):** Programme to prepare Germany for war and push autarky.
- **Great Depression (1929):** Global downturn causing German banking crises, output collapse and mass unemployment.
- **Law for the Reduction of Unemployment (1933):** Job-creation law funding public works and tax reliefs.
- **Rearmament:** State-led military build-up that drove recovery from 1933.
- **Young Plan (1929):** Reparations revision extending timetable and foreign-credit dependence.

Section 2.B - The Treaty of Versailles — constraints and domestic responses

> **"The Treaty of Versailles was a disastrous settlement for Germany, and accepting it could trigger immense social unrest."** — *John Maynard Keynes (Keynes 1919)*

Signed in 1919, the Treaty of Versailles imposed stringent restraints on Germany after its defeat in the First World War. The country was forced to accept full responsibility for the war and to shoulder severe economic penalties, with far-reaching social and economic consequences. Restrictions covered not only reparations but also the size of the army and the scope for armaments production, making it difficult to restart the German economy *(Overy 1994)*.

By 1933 Germany's economic position was already highly strained. The army remained constrained in its equipment, and the government sought to avoid any destabilisation of the currency. Once the **SA** threat had been neutralised, big business—working with the armed forces—moved to re-assert its role in German politics in pursuit of a **national-conservative** solution that promised rapid recovery *(Tooze 2006).*

Hjalmar Schacht, who headed the Ministry of Finance, favoured rearmament within reasonable limits—an acknowledgment that the country's military build-up faced treaty-imposed ceilings *(Tooze 2006)*. He also warned about bottlenecks arising from **raw-materials constraints** affecting exports and consumption, conditions linked to the settlement's terms *(Barkai 1990)*.

Strategic thinking at the time underscored how the treaty's restrictions weakened Germany's military capacity. Despite these limits, some industrialists advocated an immediate return to **militarism** and a strengthening of the army—evidence of persistent pressure to overturn the treaty's provisions *(Overy 1994)*.

Table 1. Main restrictions of the Treaty of Versailles

Restriction	Effect
War reparations	Large transfers to compensate the victors; the economy was severely drained by these payments.
Army limitation	Army reduced to 100,000 men with strict limits on military development.
Ban on air force & constrained navy	No development of an air force and sharp limits on the navy, undermining Germany's strategic security.
Territorial cessions	Loss of significant territories such as Alsace–Lorraine and cessions to neighbouring states.
Acceptance of war guilt	Germany acknowledged full political and moral responsibility for the war, generating internal pressure and destabilisation.

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

References section: B. The Treaty of Versailles — constraints and domestic responses

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press.
- Keynes, J.M. (1919) *The Economic Consequences of the Peace*. London: Macmillan.

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- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane.

Section Glossary — 2.B Treaty of Versailles

- **Army limitation:** Cap of 100,000 men; no conscription; strict limits on heavy weapons/staff training.
- **Ban on air force & constrained navy:** Prohibition on an air force and tight naval tonnage caps
- **Territorial cessions:** Loss of territories (e.g., Alsace–Lorraine) reducing industrial/resource bases.
- **War guilt clause (Art. 231):** Legal/moral basis for reparations; politicised as national humiliation.
- **War reparations:** Transfer payments to the victors draining fiscal capacity and foreign exchange.

> See earlier definitions: **Rearmament** — in *Section Glossary — 2.A*.

Sub-section 2.B.i - Economic Impacts

Germany's inability to meet its **reparations** obligations generated a **vicious circle** of inflation and economic breakdown. To meet fiscal needs the government resorted to **money printing** (monetary financing), which drove prices sharply higher and culminated in the **hyperinflation** of 1923 *(Overy 1994)*.

Combined with reparations pressure and the inability to expand military and industrial capacity, the crisis pushed Germany to the brink of **social destabilisation**. The economic shock and popular disillusionment fuelled the rise of **extremist political movements**—notably the Nazis—who capitalised on this discontent to seize power in 1933 *(Ferguson 2006; Domarus 1990)*.

References sub-section: 2.B.i Economic Impacts

- Overy, R.J. (1994) *The Inter-War Crisis 1919–1939*. 2nd edn. London: Longman.
- Domarus, M. (1990) *Hitler: Speeches and Proclamations, 1932–1945: The Chronicle of a Dictatorship*. Wauconda, IL: Bolchazy-Carducci.

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Sub-section Glossary — 2.B.i Economic Impacts

- **Hyperinflation (1923):** Collapse of purchasing power; destroyed savings and contracts.
- **Monetary financing:** Covering deficits by creating base money; inflationary if persistent.
- **Social destabilisation:** Erosion of order and trust amid unemployment and scarcity.

> See earlier definitions: **War reparations** — in *Section Glossary — 2.B*.

Section 2.C - Seizure of Power by Hitler

> **"Power is never permanent, but winning it is the hardest part."** — *Adolf Hitler (Hitler 1925)*

Hitler's seizure of power—known as **Machtergreifung** (*seizure of power*)—was the pivotal event that led to the gradual establishment of the Nazi dictatorship in Germany. Despite electoral setbacks, Hitler captured power through strategic and political manoeuvres, exploiting the economic and political crises of the Weimar Republic and the weaknesses of the traditional parties. Germany's internal instability amid the Depression, together with hostility toward socialist and liberal politicians, allowed the Nazi Party to gain ground *(Kershaw 2008)*.

Hitler was appointed Chancellor on **30 January 1933** through a political deal with other right-wing forces, including President Hindenburg, who aimed to curb Communist and Social Democratic influence. Although the circumstances of his initial accession were contradictory, his real power emerged after the **Reichstag Fire** in February 1933, which enabled the suspension of civil rights and the launch of repression against the political opposition *(Kershaw 2008; Domarus 1990)*.

Over **1933–1934**, Hitler made a series of decisions that reshaped Germany's political and economic landscape. Notable developments included the re-appointment of **Hjalmar Schacht** to head the Reichsbank, new economic measures, and the gradual removal of rivals within the regime. In parallel, the **Labour Ministry** under **Franz Seldte** promoted a programme of mass public works and job creation financed by borrowing to revive domestic demand *(Overy 2004)*.

After the radical threat from the **SA** had been neutralised in the summer of 1933, big business strengthened its position in German politics, seeking a **national-conservative** solution. Nazi reforms rapidly overturned entrenched political and business structures, re-prioritising **economic recovery** and the **restart of the armaments industry** *(Evans 2008)*.

Hitler's rule was consolidated further with the **Enabling Act** in March 1933, which allowed him to legislate without the Reichstag, and with the abolition of political parties, establishing a one-party state. The internal contradictions of the national-conservative alliance—such as the fading hopes of **Krupp** for a stable power-sharing arrangement—gave way to the full ascendancy of the Nazi regime *(Domarus 1990)*.

The government proceeded to establish comprehensive control over state and society, crushing resistance. National-Socialist policy became the state's supreme value as Germany embarked on a programme of thorough military and economic restructuring aimed at European—and ultimately global—domination.

Table 2. Key Steps in Hitler's Seizure of Power

Step	Development
Appointment as Chancellor	30 January 1933: Hitler appointed Chancellor by President Hindenburg.
Reichstag Fire Decree	February 1933: Suspension of civil liberties and crackdown on opponents after the fire in parliament.
Enabling Act	March 1933: Empowered Hitler to legislate without the Reichstag.
Abolition of parties	Banning of all political parties; establishment of the Nazi one-party state.
Regime of terror	Creation of concentration camps for political opponents and those deemed "undesirable."

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

References section — 2.C Seizure of Power by Hitler

- Domarus, M. (1990) *Hitler: Speeches and Proclamations, 1932–1945: The Chronicle of a Dictatorship*. Wauconda, IL: Bolchazy-Carducci.
- Evans, R.J. (2008) *The Third Reich at War*. London: Penguin Press.
- Hitler, A. (1925) *Mein Kampf*. Munich: Franz Eher Verlag.
- Kershaw, I. (2008) *Hitler: A Biography*. New York: W.W. Norton & Company.
- Overy, R.J. (2004) *The Dictators: Hitler's Germany, Stalin's Russia*. New York: W.W. Norton & Company.

Section Glossary — 2.C Seizure of Power (minimal, A→Z)

- **Enabling Act (1933):** Law allowing cabinet to legislate without the Reichstag.
- **Franz Seldte:** Labour Minister behind early public-works measures.
- **Machtergreifung:** Nazi “seizure of power” in 1933.
- **One-party state:** Abolition of parties; monopoly of political power by the Nazis.
- **Reichstag Fire Decree:** Emergency decree suspending civil liberties in February 1933.

> See earlier definitions: **Rearmament** — in *Section Glossary — 2.A*; **Reichsbank** — in *Section Glossary — 2.C.i*.

Sub-section 2.C.i - Effects of the Seizure of Power

Hitler’s accession decisively reshaped Germany and the wider world. The Nazi government entrenched a totalitarian regime that advanced the country’s military and economic ambitions. A strategy of rapid recovery, suppression of political opposition, and authoritarian consolidation led to the absolute dominance of the Nazi Party. Resistance from business leaders—such as **Krupp**—was minimal, and the notion of a “national-conservative” solution gradually disappeared *(Evans 2008; Overy 2004)*.

References sub-section: 2.C.i Effects of the Seizure of Power

- Evans, R.J. (2008) *The Third Reich at War*. London: Penguin Press.
- Overy, R.J. (2004) *The Dictators: Hitler’s Germany, Stalin’s Russia*. New York: W.W. Norton & Company.

Section 2.D - The Role of Hjalmar Schacht

> **“It is the duty of German policy to fulfil the rearmament programme with the speed and scale required—everything else must be subordinated to this goal.”** *— Hjalmar Schacht, memorandum to Hitler, May 1935 (Schacht 1935, cited in Tooze 2006)*

Hjalmar Schacht was one of the most **emblematic yet controversial** figures in German economic policy during the transition from Weimar to the Third Reich. His career blended orthodox economic liberalism with nationalist-revisionist ideas and ascending National Socialism.

He first distinguished himself as President of the **Reichsbank**, playing a decisive role in the **1924 monetary stabilisation** after the inflation crisis, and was viewed as an ally of **Gustav Stresemann** in restoring Germany’s international creditworthiness. He maintained close

links with international financial circles (e.g., **Montagu Norman** of the Bank of England) and initially supported an **Atlantic orientation** *(James 1986; Tooze 2006)*.

After the **Machtergreifung** in 1933, Schacht returned to the leadership of the Reichsbank through his ties with the **Nazi Party** and integrated into the new regime (James 1986). There he spearheaded key initiatives:

- **Financing rearmament** via the so-called **Mefo bills**, a para-budgetary device that enabled the covering of massive military outlays without immediate inflationary effects (Barkai 1990; Tooze 2006).
- **Participation in the Reinhardt Programme**, a public-works/jobs package of roughly **RM 1 billion** to fight unemployment and stimulate demand *(Overy 1994)*.
- **Tightening import and foreign-exchange controls** through increasingly restrictive administrative management of the economy (Overy 1994).

Schacht initially aligned himself with **Hitler's line**, asserting that **economic policy must serve rearmament** even at the expense of monetary stability (Barkai 1990). Yet he held a **more conservative, limited vision**, favouring rearmament *within bounds*, colonial restitution, and fiscal restraint *(Tooze 2006)*.

This **dual role**—technocrat and regime insider—culminated in his **resignation from the Finance Ministry** in 1937 and eventual **removal from the Reichsbank** in 1939 (Tooze 2006). Despite his departure, his contribution to **financing Nazi policy and armaments** was pivotal.

Table 3. Schacht's Principal Initiatives (1933–1939)

Year	Initiative	Description
1933	Return to the Reichsbank	Appointed by Hitler; strategic reorientation toward Schacht's approach.
1933	Reinhardt Programme	Public-works package to combat unemployment.
1934	Foreign-exchange controls	Daily allocation; moratorium on parts of external debt.
1935	Rearmament financing	Extensive use of **Mefo bills**.
1937	Resignation (Finance Ministry)	Disputes with Hitler and Göring over the scale of spending.
1939	Departure from the Reichsbank	Onset of inflation; reduction of Schacht's influence.

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

References section 2.D: The Role of Hjalmar Schacht

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press.
- James, H. (1986) *The German Slump: Politics and Economics, 1924–1936*. Oxford: Clarendon Press.
- Overy, R.J. (1994) *War and Economy in the Third Reich*. Oxford: Oxford University Press.
- Schacht, H. (1935) ‘Memorandum to Hitler, May 1935’. Cited in: Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane.
- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane.

Section Glossary — 2.D The Role of Hjalmar Schacht

- **Foreign-exchange controls:** Daily allocation/restrictions to manage scarce currency and external debt.
- **Reinhardt Programme:** c. RM 1 billion public-works/jobs package to reduce unemployment and stimulate demand.
- **Schacht, Hjalmar:** Banker and economist; Reichsbank President and Economics Minister who engineered early rearmament finance.

> See earlier definitions: **Rearmament** — in *Section Glossary — 2.A*.

Chapter 3 — Mefo Bills: Mechanism and Legal Structure

Section 3.A - Establishment of MEFO (Metallurgische Forschungsgesellschaft)

> *"We are not deceived by the calm surface of things. Behind it, revolution is in preparation." — Joseph Goebbels* [attributed]

As interwar Germany emerged from the last convulsions of the Weimar Republic and the Third Reich moved onto an aggressive path of reconstruction, the need for rapid military build-up raised acute financing questions. The new regime wished to avoid the spectre of the hyperinflation that had haunted German memory scarcely a decade earlier. In this context, the creation of **MEFO (Metallurgische Forschungsgesellschaft, m.b.H.)** became one of the most ingenious—and opaque—financial innovations of the Nazi state.

MEFO was a **limited-liability company (GmbH)** with no commercial activity, yet it played a **critical role in the regime's financial design**. English-language sources often describe it as a *secret state holding company*—a **covert public vehicle** that managed **additional secret Reich funds for armaments** *(Tooze 2006)*.

The founding of MEFO dates to **late 1934–early 1935**, precisely when Hitler elevated **re-militarisation** to a primary regime objective. The instrument crafted to support this choice was the product of **Hjalmar Schacht's economic ingenuity and technocratic agility**.

Schacht's role and the Mefo bills

Working with senior figures at the Reichsbank and the Finance Ministry, Schacht designed a **parallel money-creation mechanism** that did **not** show up immediately in the state budget. At its core was the **issue of "Mefo bills"** (*Mefo-Wechsel*): promissory bills that **armaments contractors drew and MEFO accepted** as payment media *(Barkai 1990; James 1986)*.

The process was simple yet expertly camouflaged: contractors producing military equipment drew Mefo bills, which they could **discount at any recognised German bank**. The banks, in turn, could **rediscount these bills at the Reichsbank**, thereby creating a **cycle of hidden liquidity** (James 1986; Overy 1994). In practice, MEFO was a **façade**: no plant, no staff, no trading. But it was the **central conduit of a virtual credit expansion** that allowed Schacht to finance military outlays while keeping the state's official profile placid *(Tooze 2006)*.

Results and scale

Sources indicate that use of Mefo bills began in 1934, with **RM 2,140 million** in the fiscal year **1934/35**, rising to **RM 2,700 million** the following year (Speer 1970). By **1938**, over **RM 12 billion** of Mefo bills had circulated—roughly **half of total rearmament outlays** in the period, by contemporary estimates.

Table 4. Share of Mefo bills in Nazi Germany's GDP

Year	GDP (million RM)	Mefo bills (million RM)	Mefo bills as % of GDP
1934	40,000	2,140	5.35%
1935	42,000	2,700	6.43%
1936	45,000	3,000	6.67%
1937	48,000	4,000	8.33%
1938	50,000	4,500	9.00%

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

Notes to Table 5: Mefo figures reflect annual issuance/increase; GDP values are period estimates; the percentage is the ratio of Mefo issuance to annual GDP.

References section 3.A: Establishment of MEFO

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press.
- James, H. (1986) *The German Slump: Politics and Economics, 1924–1936*. Oxford: Clarendon Press.
- Overy, R.J. (1994) *War and Economy in the Third Reich*. Oxford: Oxford University Press.
- Speer, A. (1970) *Inside the Third Reich*. New York: Macmillan.
- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane.

Section Glossary — 3.A Establishment of MEFO

- **Rediscounting:** Central-bank purchase of a bill already discounted by a commercial bank, supplying liquidity.
- **Secret state holding company:** Covert public vehicle used to channel/park state funds outside the formal budget.
- **Supplier credit:** Payment deferral granted by suppliers (e.g., armaments firms) against bills rather than cash.

> See earlier definitions: **Mefo bills**, **MEFO**, **Rearmament**, **Reichsbank** — in Chapters 1–2 glossaries.

Section 3.B - How the Mefo bills worked

> **“The art of financing war is not to create money, but to make it invisible.”**
> — Paraphrase of Hjalmar Schacht’s approach

The idea and the creation of MEFO

During the period of recovery and rearmament in Nazi Germany, state financing policy followed paths that bypassed ordinary budget procedures. At the centre of this effort stood the invention of **Mefo bills**, a financial device that enabled the **mass, covert channelling of funds into armaments** *(Tooze 2006)*.

The **Metallurgische Forschungsgesellschaft, m.b.H. (MEFO)** was a private limited company **founded in 1934** for the **exclusive purpose of managing secret state funds for the war industry**. In practice, MEFO was a **front company** behind which the state itself operated *(Tooze 2006)*.

Hjalmar Schacht, then President of the Reichsbank and Minister of Economics, sought a method to accelerate rearmament **without provoking foreign or domestic scrutiny** and without a visible increase in public debt *(Schacht 1967)*.

Operating mechanism of the Mefo bills

The mechanism relied on **well-understood banking practices**:

- **Armaments contractors** drew Mefo bills as payment for orders.
- **MEFO** accepted the bills, **guaranteeing** payment at maturity.
- Contractors could **discount** the bills at private banks, which could in turn **rediscount** them at the **Reichsbank** (Tooze 2006).
- The bills carried a **state guarantee** and paid **4% annual interest**, which encouraged uptake by banks (Barkai 1990).
- In circulation they functioned like **unofficial government paper**, yet **did not appear** in public-debt statistics (Overy 1994; Ferguson 1998).

Example — how a Mefo flow worked in practice

1. The German government orders 100 new field guns from **Krupp**.
2. Instead of cash, **MEFO** issues Mefo bills worth **RM 10 million**.
3. **Krupp** takes the bills to **Deutsche Bank** and **discounts** them for cash (minus a small interest deduction).
4. **Deutsche Bank**, needing liquidity, **rediscounts** the bills at the **Reichsbank** and receives cash from the central bank.
5. The **Reichsbank** adds the bill to its portfolio—**absorbing the liability without it showing in the state budget**.

Result: equipment is delivered, payments are made, the economy “moves”—all **beneath the radar** of international observers.

What does “rediscount” mean?

Rediscounting (Ger. *Rediskontierung*) is when a **commercial bank** that has already bought (discounted) a customer’s bill **sells it on to the central bank** (here, the Reichsbank) to obtain liquidity—**creating money** without overt public borrowing.

Concealing outlays and fiscal opacity

A critical feature of Mefo bills was that they **did not appear in the official budget**. From **1935** the Finance Ministry stopped publishing complete expenditure figures, helping the regime **mask the scale of rearmament** *(Tooze 2006)*. Detaching Mefo bills from official accounts **blurred the true size of monetary expansion** and dampened criticism at home and abroad *(Overy 1994; Ferguson 1998)*.

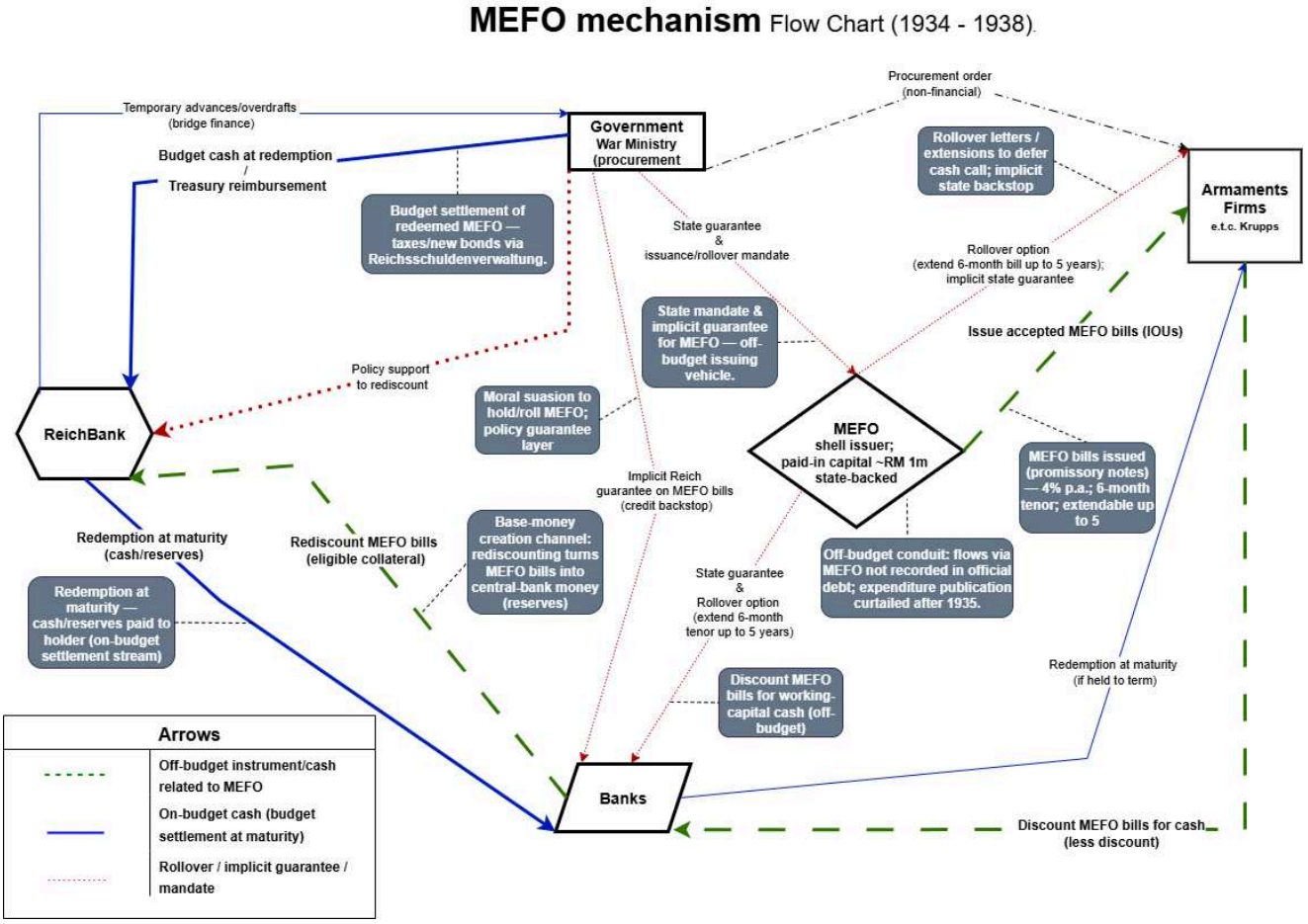
Endgame and inflationary pressures

By **1938**, continued reliance on Mefo bills **raised concerns** in government and at the Reichsbank. Schacht warned about inflationary pressures and proposed **phasing them out** in favour of other methods (Schacht 1967; Overy 1994). Replacement was difficult: the stock of bills was so large that retiring them required either **substantial tax increases** or **new state borrowing** *(Tooze 2006)*.

Conclusions

Mefo bills were a highly effective financing tool that **served the regime’s primary objective—rebuilding Germany’s military power**—while avoiding the transparency and constraints that parliamentary or international oversight would have imposed. Beyond their technical interest, they illustrate **how creative accounting and financial instruments can be turned into instruments of political power**.

Flow Diagram — Mefo Mechanism (Off-Budget vs On-Budget Flows)


MEFO mechanism Flow Chart (1934 - 1938)
Temporary advances/overdrafts (bridge finance)
Budget cash at redemption / Treasury reimbursement
Government War Ministry (procurement
Procurement order (non-financial)
Armaments Firms e.t.c. Krupps
Budget settlement of redeemed MEFO — taxes/new bonds via Reichsschuldenverwaltung.
Rollover letters / extensions to defer cash call; implicit state backstop
State guarantee & issuance/rollover mandate
Rollover option (extend 6-month bill up to 5 years); implicit state guarantee
State mandate & implicit guarantee for MEFO — off-budget issuing vehicle.
Issue accepted MEFO bills (IOUs)
Policy support to rediscount
ReichBank
Moral suasion to hold/roll MEFO; policy guarantee layer
MEFO shell issuer; paid-in capital ~RM 1m state-backed
MEFO bills issued (promissory notes) — 4% p.a.; 6-month tenor; extendable up to 5
Implicit Reich guarantee on MEFO bills (credit backstop)
Redemption at maturity (cash/reserves)
Rediscount MEFO bills (eligible collateral)
Base-money creation channel: rediscounting turns MEFO bills into central-bank money (reserves)
Off-budget conduit: flows via MEFO not recorded in official debt; expenditure publication curtailed after 1935.
State guarantee & Rollover option (extend 6-month tenor up to 5 years)
Redemption at maturity — cash/reserves paid to holder (on-budget settlement stream)
Redemption at maturity (if held to term)
Discount MEFO bills for working-capital cash (off-budget)
Banks
Discount MEFO bills for cash (less discount)
Arrows
Off-budget instrument/cash related to MEFO
On-budget cash (budget settlement at maturity)
Rollover / implicit guarantee / mandate

How to read the diagram (one-cycle overview)

1. **Government** mandates/backs **MEFO** (implicit guarantee).
2. **MEFO** issues **MEFO bills** to **armament firms** for deliveries.
3. **Firms** discount the bills with **banks** (working-capital cash).
4. **Banks** rediscount bills at the **Reichsbank** → base-money creation channel.
5. At (extended) maturity, bills are **redeemed in cash**; the **Treasury** settles on-budget via taxes/bonds.
6. If needed, maturities are **rolled over** to defer cash calls.

Legend

- **Dashed (green)** = *Off-budget* instrument/cash related to MEFO (issuance → discount → rediscount).
- **Solid (blue)** = *On-budget* cash (redemption/settlement at maturity).
- **Dotted (red)** = *Rollover / implicit guarantee* (extensions, moral suasion).

Key takeaways

- MEFO functioned as an **off-budget conduit** that masked rearmament outlays.
- **Rediscounting at the Reichsbank** effectively **created base money** against MEFO collateral.
- **Budget impact is delayed** until redemption, when settlement moves **on-budget** (taxes/bonds).

- Rollover options and implicit guarantees **reduced immediate cash pressure** but **increased latent risk**.

Figure 3.B-1 — Mefo Mechanism Flow Diagram.
Sources: Tooze (2006); Barkai (1990); James (1986); Overy (1994).
Notes: Schematic; nominal RM; “off-budget” flows not recorded in official debt; rediscount = central-bank money creation; maturity up to 5 years with 6-month rollovers.

References section — 3.B How the Mefo bills worked

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press.
- Ferguson, N. (1998) *The Pity of War: Explaining World War I*. New York: Basic Books.
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- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane.

Section Glossary — 3.B How the Mefo bills worked

- **Discounting:** Selling a bill for cash before it matures, at a price below face value.
- **Rediscount window:** Central-bank facility that buys previously discounted bills from commercial banks.
- **State guarantee (Reich guarantee):** Sovereign backstop ensuring payment at maturity.
- **Unofficial government paper:** Marketable claims that function like state debt without appearing in the official debt statistics.

> See earlier definitions: **Bill of exchange** (1.A), **Mefo bills** / **MEFO** (1.A–3.A), **Rediscounting** (3.A), **Reichsbank** (2.C.i).

Section 3.C - The Mefo bill circuit and participating actors

> *“The darkest inventions are born not from a lack of resources, but from prohibitions.”*

The operation of the **Mefo bill** system was among the most ingenious—and most opaque—financing schemes of the interwar period. It enabled the **rapid rearmament of Nazi Germany**, circumventing both the restrictions of the Treaty of Versailles and Reichstag budget oversight. The system rested on the cooperation of four critical actors:

Reichsbank (central bank)

Under **Hjalmar Schacht**, the **Reichsbank** played a central role. Although it did not issue Mefo bills itself, it **guaranteed payment at maturity** and, crucially, provided a **rediscount facility** when industry or commercial banks needed liquidity. This effectively turned Mefo bills into money **without** formal government bond issuance or parliamentary tax approval (Tooze 2006; James 1986).

Industry / enterprises

Firms—chiefly major **armaments contractors** such as **Krupp, IG Farben, Rheinmetall, and Siemens**—were the **end-recipients of Mefo bills**. After signing supply contracts, instead of immediate cash they received **promissory notes** from the **MEFO** shell company. These could be **discounted in the banking market** for instant liquidity or held to maturity, when they were repaid under the Reichsbank guarantee (Barkai 1990).

Ministry of Defence (Reichswehrministerium)

The **Defence Ministry** was the **driving force** of the mechanism. Its procurement contracts created the fundamental need for the MEFO scheme, even though the ministry did not itself issue or redeem the bills (Overy 1994).

Metallurgische Forschungsgesellschaft m.b.H. (MEFO)

MEFO was a **front legal entity** created at state initiative with nominee industrial shareholders. It had **no productive activity**; it functioned solely as the **issuing vehicle** for Mefo bills, keeping payments at arm's length from the official state sphere and preserving the desired opacity (Tooze 2006; James 1986).

Conclusions

The Mefo bill system operated as a **parallel, state-controlled shadow channel** that leveraged markets while avoiding immediate tax hikes or orthodox public borrowing. The participation of the central bank, private banks, industry, and the Defence Ministry made the scheme highly effective—if entirely opaque (Barkai 1990; Overy 1994).

References section — 3.C The Mefo bill circuit and participating actors

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press.

- James, H. (1986) *The German Slump: Politics and Economics, 1924–1936*. Oxford: Clarendon Press.
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- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane.

Section Glossary — 3.C The Mefo bill circuit and participating actors

- **Backstop (central-bank):** Guarantee or facility ensuring bills can be converted into cash when needed.
- **Prime contractors:** Large firms holding the principal armaments contracts (e.g., Krupp, IG Farben).
- **Shadow channel:** Parallel, opaque financing route operating outside ordinary budget scrutiny.

> See earlier definitions: **Mefo bills**, **MEFO**, **Reichsbank** — in earlier chapter/section glossaries.

Section 3.D - Bypassing the Budget and the Reichstag

> **“We shall never win a war if we have to finance it via the parliamentary route.”**
> — Saying attributed to circles close to Hjalmar Schacht

Extra-budgetary financing: the Mefo bill case

As noted above, **Mefo bills**, issued by **Metallurgische Forschungsgesellschaft, m.b.H. (MEFO)**—a shadow company acting as a state front—were **rediscounted by the Reichsbank**, allowing the regime to **finance rearmament without the outlays appearing in the official budget** *(Tooze 2006)*. This hidden channel enabled the Nazi government to move beyond parliamentary controls and fiscal constraints, reinforcing its rearmament strategy.

Political circumvention of parliament

Alongside evading the budget, the regime concentrated power in the hands of Hitler and the Nazi Party, sharply reducing the Reichstag’s role. From his appointment as Chancellor, Hitler stressed the **priority of rearmament** and the need to shield the country from internal and external threats (Barkai 1990; Kershaw 1998). Policy focused on rebuilding German power through the army and the expansion of **Lebensraum** *(Hillgruber 1981)*.

This centralisation culminated in the **Four-Year Plan**, the basis of the regime's military-economic strategy. With **Göring** appointed **General Plenipotentiary**, the regime asserted sweeping control over the economy, marginalising the Reichstag and institutional oversight *(Tooze 2006)*. Economic policy subordinated everything to **rearmament first**.

The force of policy priority

In his Four-Year Plan memorandum, Hitler made clear that rearmament was the state's absolute priority with no room for delay. The will to **fund rearmament immediately and without constraint** was operationalised through Mefo bills, which served the regime without fiscal transparency or parliamentary approval *(Tooze 2006)*.

Conclusions

Bypassing the budget and the Reichstag was a strategic choice that enabled the pursuit of war aims and the restructuring of the economy without democratic limits. Through extra-institutional mechanisms such as Mefo bills and the concentration of power around Hitler, the regime **eliminated parliamentary scrutiny** and **secured continuous financing for rearmament**, laying the groundwork for war.

References section — 3.D Bypassing the Budget and the Reichstag

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press.
- Hillgruber, A. (1981) *Germany and the Two World Wars*. Cambridge, MA: Harvard University Press.
- Kershaw, I. (1998) *Hitler: 1889–1936: Hubris*. London: Allen Lane.
- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane.
- 'Hitler's Four-Year Plan memorandum (1936)', cited in Tooze (2006), pp. 160–162.

Section Glossary — 3.D Bypassing the Budget and the Reichstag

- **General Plenipotentiary:** Officer endowed with sweeping authority to execute the Four-Year Plan (e.g., Göring in 1936).
- **Lebensraum:** Ideology of territorial expansion to secure "living space" for Germany.
- **Parliamentary oversight:** Legislative scrutiny of government spending that the mechanism was designed to avoid.

> See earlier definitions: **Four-Year Plan** (2.A), **Off-balance-sheet financing** (1. Introduction).

Chapter 4 — Economic and Fiscal Impacts

Section 4.A - Volume and allocation of Mefo bills (RM 12–35 billion)

> **“The art of economics is to achieve the impossible without anyone perceiving it as fraud.”**
> *— Hjalmar Schacht*

In **June 1933**, Hjalmar Schacht endorsed an ambitious rearmament programme of **RM 35 billion** for the next **eight years**, implying an **average annual outlay of ~RM 4.4 billion** (James 1986). This represented a radical departure from prior conceptions of Germany’s military reconstruction. Already by **April 1933**, the cabinet had exempted the army from ordinary fiscal-control procedures, clearing the way for extra-institutional military finance *(James 1986, p. 241)*.

During the summer of **1933**, Schacht adapted to military purposes the **off-budget payment system** first used for civilian job-creation (Overy 1994). The innovation culminated in **April 1934** with the introduction of **Mefo bills**—IOU-type promissory notes issued in the name of the shadow company **Metallurgische Forschungsgesellschaft m.b.H. (Mefo GmbH)** *(Tooze 2006)*.

Mefo was founded with a token share capital of **RM 1 million**, contributed symbolically by major industrial combines—**Vereinigte Stahlwerke, Krupp, Siemens, Deutsche Industrie-Werke, and Gutehoffnungshütte (GHH)** (Barkai 1990, pp. 133–134). Mefo bills carried a **state guarantee**, paid **4% annual interest**, and could be **discounted at German commercial banks**, which in turn could **refinance/rediscount** them at the **Reichsbank** *(Reichsbank Jahresberichte 1934–1938)*.

A crucial ingredient of their success was **opacity**: Mefo bills **were excluded from the official public-debt statistics**, and from **1935** onward the government ceased publishing full expenditure data *(Tooze 2006, pp. 109–111)*.

The flow of annual issuance rose rapidly:

- **1934/35:** RM **2,140** million
- **1935/36:** RM **2,720** million
- **1936/37:** RM **4,450** million
- **1937/38:** RM **2,690** million

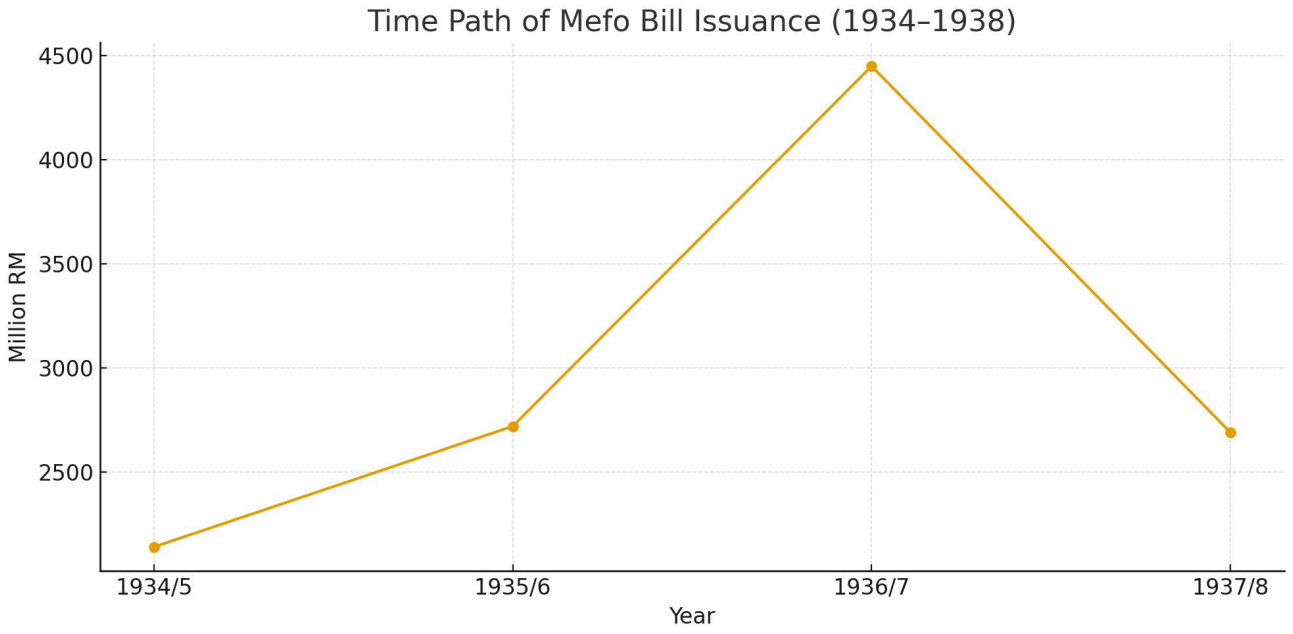
By **March 1938**, the outstanding stock had **sextupled** relative to **April 1935**, becoming the **dominant component of total (published and hidden) state debt**. On conservative estimates, **Reichsbank holdings of Mefo bills** increased by roughly **RM 4 billion** between **1934–1937** *(Reichsbank Jahresberichte)*.

Although the rearmament target totalled **RM 35 billion**, the Mefo mechanism financed a **substantial portion** rather than the entirety. The bills **circulated widely** among armaments contractors, firms and banks, ensuring **liquidity via the banking system**. In this way the government created a **parallel monetary flow** outside immediate budget scrutiny *(Tooze 2006)*.

Issuance ceased in early 1938, once the economy had reached **full employment** and further monetary stimulus threatened **inflationary pressure** *(James 1986; Overy 1994)*.

Chart 2. Time path of Mefo

2. Time path of Mefo bill issuance (1934–1938) *(Reichsbank Jahresberichte, 1934–1938)*:



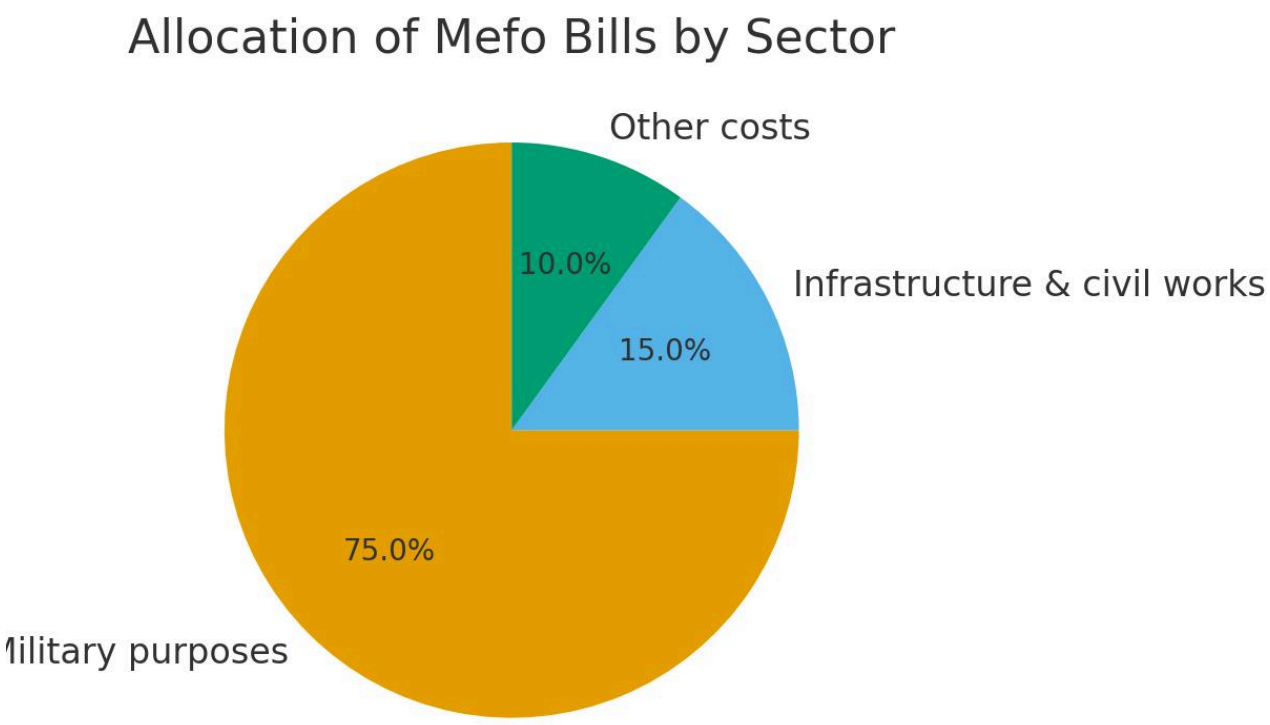
> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

Chart 3. Allocation

**3. Allocation of Mefo bills by broad use:

- Military purposes: **75%**
- Infrastructure & civil works: **15%**

- Other costs: **10%**



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

Scacht's technique amounted to an unprecedented policy mix: a **controlled inflationary stance clothed in the garb of shadow, off-budget accounting**, through which the Third Reich rearmed rapidly without triggering the political backlash that a conventional fiscal expansion would have provoked.

References section — 4.A Volume and allocation of Mefo bills (RM 12–35 billion)

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press, pp. 133–134.
- James, H. (1986) *The German Slump: Politics and Economics, 1924–1936*. Oxford: Clarendon Press, p. 241.
- Overy, R.J. (1994) *War and Economy in the Third Reich*. Oxford: Oxford University Press, pp. 80, 95.
- Reichsbank (1934–1938) *Jahresberichte* (Annual Reports), archival data on Mefo bill holdings and issuance.
- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane, pp. 109–111.

- “IOU (I Owe You):” private promissory note; informal payment promise without the formal status of a bond or loan.

Section Glossary — 4.A Volume and allocation of Mefo bills (RM 12–35 billion)

- **Full employment:** Situation where virtually all willing workers are employed; further stimulus risks inflation rather than output gains.
- **Issuance (flow) vs stock (outstanding):** New bills created during a period (flow) versus total unpaid bills at a point in time (stock).
- **Opacity (statistical):** Design choice to keep liabilities outside official debt statistics.
- **Rediscount/refinance:** Commercial banks sell previously discounted bills to the central bank to obtain liquidity (cf. prior “Rediscounting”).
- **Token capital:** Minimal nominal share capital used to incorporate a vehicle (e.g., Mefo GmbH at RM 1 million).
- **Working allocation:** Broad split of bill-financed uses (e.g., 75% military, 15% infrastructure, 10% other) for analytical exposition.

> See earlier definitions: **Mefo bills**, **MEFO**, **Reichsbank**, **Rearmament** (Chs. 1–3).

Section 4.B - Impact on inflation and monetary policy

> **“Inflation is, in the final analysis, always and everywhere a monetary phenomenon.”**
> — *Milton Friedman*

The introduction of the MEFO accounts was an ingenious—if highly unorthodox—way to circumvent the Versailles-era constraints on Germany’s rearmament. Its consequences, however, went far beyond fiscal discipline; they reached deeply into **monetary policy** and, by extension, **inflation** *(Tooze 2006)*.

In effect, via the MEFO accounts the state issued **indirect money**: promises to pay that, while not initially recognised as legal tender, **entered the payments system** and functioned as a means of settlement. The **Reichsbank**, under Hjalmar Schacht, accepted MEFO notes for discounting, preserving a façade of independence while in practice participating in a **parallel money-creation mechanism** (Schacht 1967). Thus, **overt money printing** was avoided—but not the **indirect expansion of the monetary base** *(Barkai 1990)*.

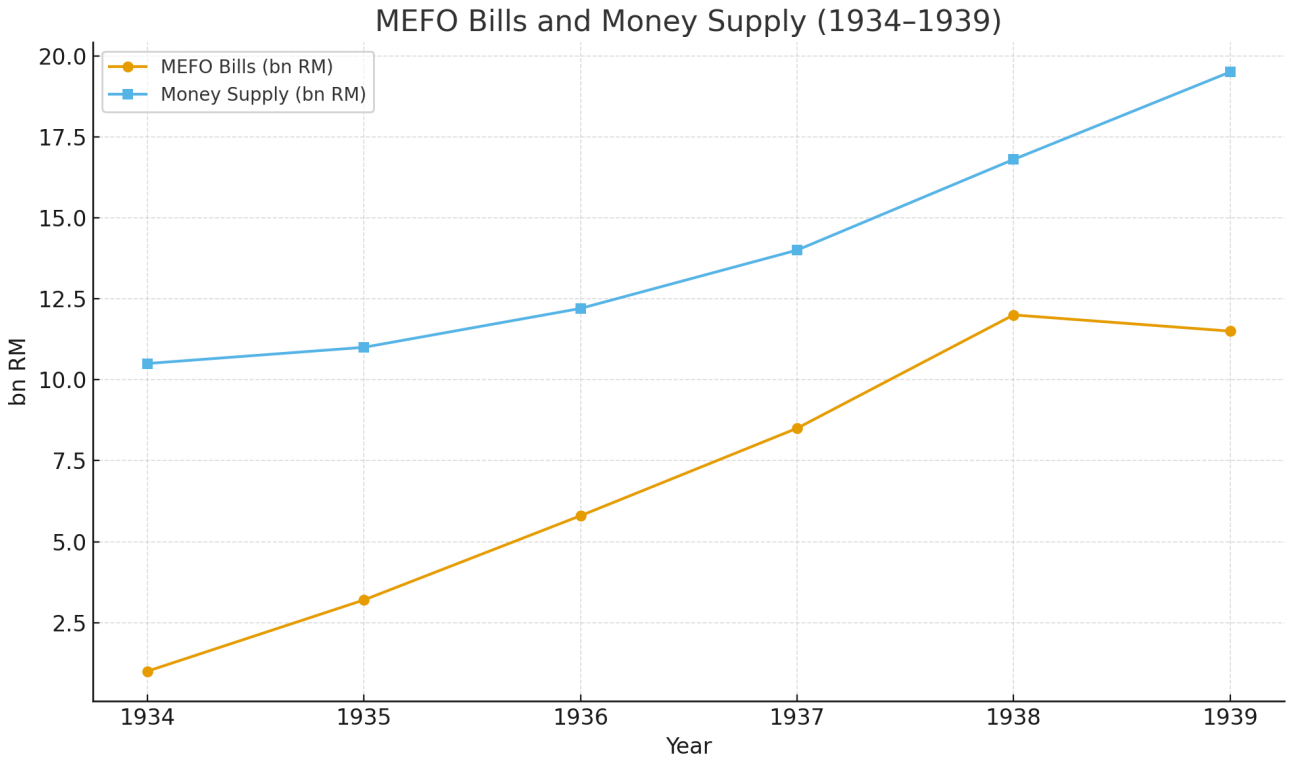
This adroit management helped **avoid an immediate inflation flare-up** in the early years (1934–1936). Yet as the stock of MEFO bills swelled—**approaching RM 12 billion by 1938**—the attendant risks became increasingly visible (James 1986). Because the state was obliged to redeem or roll these bills within five years, the central bank faced the temptation of **systematic debt monetisation** *(Buchheim 2002*).

At the same time, sources record **broader state interventions** in monetary policy and interest-rate management. The government sought to reduce long-term rates to **4.5%**, cutting borrowing costs. To enforce this "general conversion act," it **restricted trading** in non-converted securities and their use as collateral at the Reichsbank, while applying **political and social pressure** on investors.

In parallel, the Defence Ministry's use of **Mefo promissory notes** to pay private firms—and their subsequent **rediscounting** in the money market and at private banks—amounted to a **credit-expansion mechanism** with direct effects on money circulation. From April 1933, Schacht—then Reichsbank President—also promoted a **credit-financed jobs programme**, further boosting demand through monetary channels.

In **June 1934**, with the **suspension of external-debt service** and the creation of a **controlled foreign-exchange allocation system**, an indirect mechanism emerged to manage the monetary balance. The proposal for a **"pseudo-market" in foreign exchange** via coupons underscores the turn to state intervention. Schacht's later appointment as **Minister of Economics** and his control over investment highlight the **concentration of power** and the central direction of economic policy *(Overy 1994)*.

Chart 4. MEFO bills vs money supply (1934–1939)



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

The upward path of MEFO bills aligns with the general broadening of the **monetary base**, illustrating their **indirect role** in monetary policy *(Tooze 2006, pp. 142–144)*. Money-supply growth was **not matched** by a commensurate increase in capacity for consumer goods, intensifying **inflationary pressures**, especially after 1937.

Table 5. Stock of MEFO bills and money supply (1934–1939

Year	MEFO bills (bn RM)	Money supply (bn RM)
1934	1.0	10.5
1935	3.2	11.0
1936	5.8	12.2
1937	8.5	14.0
1938	12.0	16.8
1939	11.5	19.5

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

Social and political signals also pointed to price pressures—for instance, a modified version of the “Horst Wessel” song reportedly included references to rising prices, indicating **public**

awareness of dearer living costs. As the economy shifted toward **war needs and exports**, the availability of consumer goods shrank, adding to inflationary strain. The regime responded with **indirect rationing** and **price/quantity controls** in shops, producing a regime of **repressed inflation** *(Barkai 1990)*.

The sequence ended abruptly when war brought **administrative price controls, rationing, and banking restrictions**, temporarily masking inflation (Abelshauser 1998). In substance, however, the economy had already moved into **repressed inflation**, which was **released with damaging effects** in the post-war years *(Overy 1994)*.

The MEFO case is not merely a vignette of financial ingenuity; it shows how **monetary policy can be instrumentalised for short-run goals at long-run cost** (Schacht 1967). Schacht himself did not ignore the danger: by **1938** he had openly opposed further use of the mechanism, warning of **inflationary consequences** and the potential **loss of monetary-policy control** *(James 1986*).

References section — 4.B Impact on inflation and monetary policy

- Abelshauser, W. (1998) ‘Germany: Guns, butter and economic miracles’, in Harrison, M. (ed.) *The Economics of World War II*. Cambridge: Cambridge University Press.
- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press, p. 119.
- Buchheim, C. (2002) ‘The role of business in the Nazi economy: Revisiting the debate’, *The Economic History Review*, 55(3), pp. 595–616.
- James, H. (1986) *The German Slump: Politics and Economics, 1924–1936*. Oxford: Clarendon Press, p. 225.
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- Schacht, H. (1967) *The Magic of Money*. London: Oldbourne, pp. 111–113.
- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane, pp. 142–144.

Section Glossary — 4.B Impact on inflation and monetary policy

- **Debt monetisation:** Financing government obligations by creating base money (directly or indirectly).
- **Foreign-exchange allocation:** Administrative rationing of scarce FX via permits/quotas or coupon “pseudo-markets”.
- **Monetary base:** Currency in circulation plus bank reserves at the central bank; the foundation of money supply.

- **Money supply:** Broad stock of money circulating in the economy (e.g., currency plus deposits).
- **Repressed inflation:** Price pressures masked by controls, rationing, or shortages rather than eliminated.
- **Universal conversion (rate policy):** Coercive conversion scheme to push down long-term interest rates (toward ~4.5%) and control collateral eligibility at the central bank.

> See earlier definitions: **Mefo bills / MEFO** (Chs. 1–3), **Reichsbank** (2.C.i), **Rediscounting** (3.A).

Section 4.C - Comparison with other parallel financing tools

> *"The art of taxation consists in so plucking the goose as to obtain the largest amount of feathers with the least possible hissing."*
> — Jean-Baptiste Colbert

The rise of **Mefo bills** in Nazi Germany was an instance of innovative yet shadowy finance. It was not unique. At different times, states have devised **parallel financing mechanisms**—some fully official, others more opaque.

Synopses of selected instruments

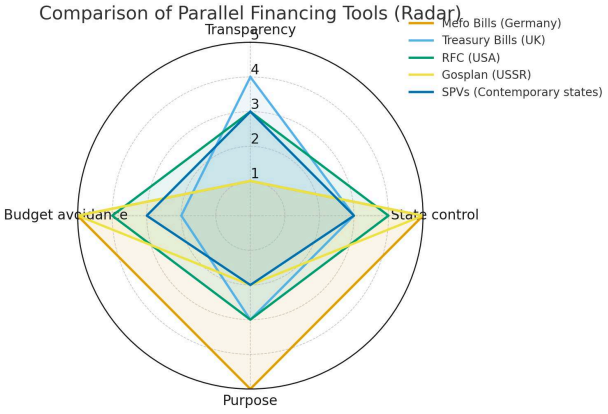
- **Mefo bills (Germany)**
  Introduced in 1934 to conceal rearmament outlays. **MEFO GmbH** was a shell issuer; the bills were redeemed by the **Reichsbank**, with **no parliamentary scrutiny**. A tool of comprehensive state control serving a single strategic purpose *(Tooze 2006)*.
- **Treasury bills (United Kingdom)**
  An official, short-term public-debt instrument used extensively in the Second World War, but **within the budget** and subject to **high transparency** and audit *(Broadberry & Howlett 2005)*.
- **RFC — Reconstruction Finance Corporation (United States)**
  Created in 1932 to refinance banks and channel liquidity to public works and firms. A state body operating with managerial flexibility and partial autonomy—**a hybrid form of intervention** *(Olson 1988)*.
- **Gosplan (USSR)**
  The central planning agency of the Soviet economy. It did not finance via markets but **directed the whole production system**—a "parallelism" of **command and control** rather than of balance-sheet technique, with minimal transparency *(Davies 1998)*.
- **SPVs (Special Purpose Vehicles — contemporary states)**
  Legal entities used to segregate assets/liabilities and, at times, to **circumvent budget limits** (e.g., **EFSF/ESM** in the EU debt crisis). Formally supervised, yet capable of **off-balance-sheet** effects *(Glinavos 2013)*.

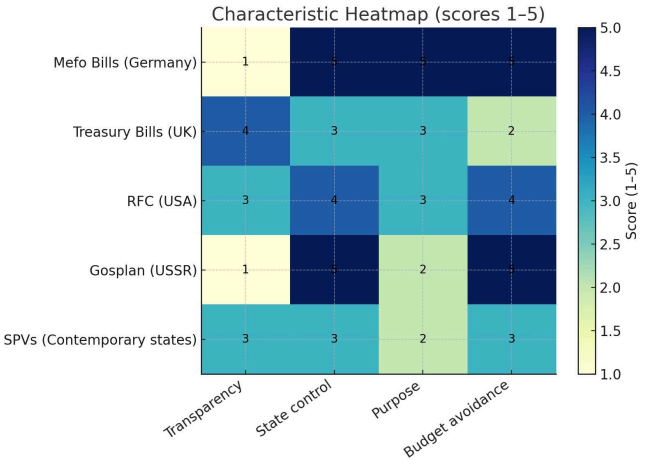
Comment on evaluation axes

1. **Transparency. Mefo bills** and **Gosplan** score lowest. **Treasury bills** and many **SPVs** are institutionally overseen, though sometimes technically complex.
2. **State control. Mefo** and **Gosplan** represent high centralisation; **SPVs** occupy a hybrid space shared with supranational overseers.
3. **Purpose. Mefo** served a single **military** aim; the **RFC** targeted social/economic recovery; **SPVs** are tool-like and context-dependent.
4. **Budget avoidance. Mefo bills** and **Gosplan** operated **outside the budget**; **SPVs** may have similar effects but typically under legal cover and oversight.

Chart 5. Parallel financing tools, visual view

Visual summary





> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

References section — 4.C Comparison with other parallel financing tools

- Broadberry, S. and Howlett, P. (2005) ‘The United Kingdom’, in Harrison, M. (ed.) *The Economics of World War II*. Cambridge: Cambridge University Press.
- Davies, R.W. (1998) *Soviet Economic Development from Lenin to Khrushchev*. Cambridge: Cambridge University Press.
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- Olson, J.S. (1988) *Saving Capitalism: The Reconstruction Finance Corporation and the New Deal, 1933–1940*. Princeton, NJ: Princeton University Press.
- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Penguin/Allen Lane.

Section Glossary — 4.C Comparison with other parallel financing tools

- **Gosplan:** USSR’s central planning agency directing output, allocation and prices under command economy.
- **Reconstruction Finance Corporation (RFC):** US federal corporation (1932–1957) providing crisis liquidity and investment finance.
- **Special Purpose Vehicle (SPV):** Stand-alone legal entity used to isolate risks or funding; may enable **budget circumvention**.
- **Treasury bill (T-bill):** Short-term government security issued within the official budget and subject to audit and disclosure.

> See earlier definitions: **Off-balance-sheet** (1.Intro), **Opacity** (4.A), **Reichsbank** (2.C.i), **Mefo bills / MEFO** (Chs. 1–3).

Chapter 5 — Conversion to Present Values

Section 5.A - Inflation adjustment (CPI)

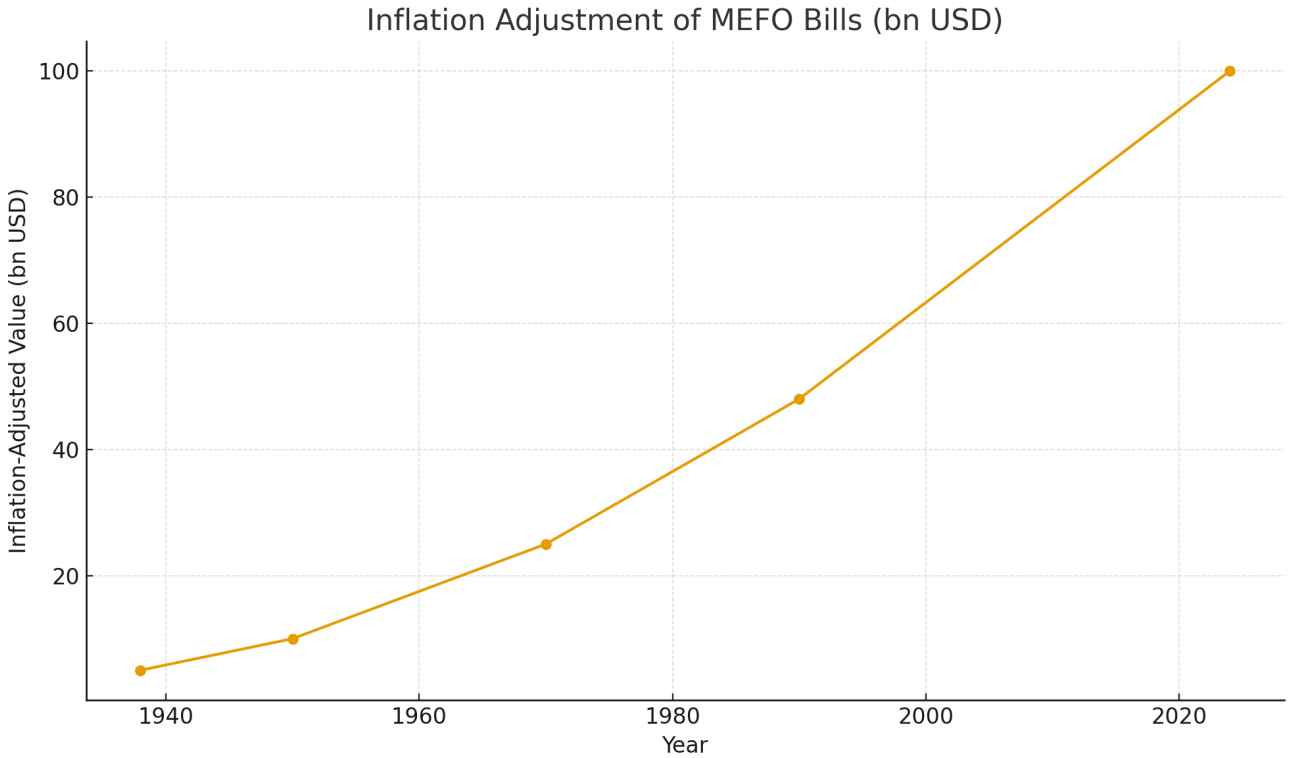
> “There are two ways to conquer and enslave a nation. One is by the sword. The other is by debt.”
> *John Adams*

Within the aggressive recovery strategy adopted by Nazi Germany after 1933, **MEFO bills** were the most inventive instrument of *indirect* financing for the armaments drive. These were post-dated bills of exchange issued via the shell company **Metallurgische Forschungsgesellschaft m.b.H. (MEFO)**, acting as a substitute for public borrowing and **displacing official state debt from the budget** during **1934–1938** (Tooze 2006). Their **cumulative issuance reached about RM 12 billion**, a sum **absent from published state accounts**, which misled both domestic opinion and foreign observers *(Barkai 1990)*.

CPI-based conversion of MEFO bills and the cost of living

To gauge the true magnitude of this hidden intervention, we convert the **RM 12 billion** stock of **MEFO bills** into contemporary terms using the **Consumer Price Index (CPI)**. Based on the period exchange rate (**≈ 1 RM = 0.40 USD**), the stock corresponds to **~USD 4.8 billion in 1938 dollars** (James 1986). Applying a CPI inflation factor of **~×21 from 1938 to 2024**, the **inflation-adjusted value** is roughly **USD 100 billion in 2024 dollars** *(BLS CPI calculator, 2024)*. This highlights the **massive scale** of the financing device, which materially underwrote Germany’s industrial retooling and rearmament ahead of expansionist aims.

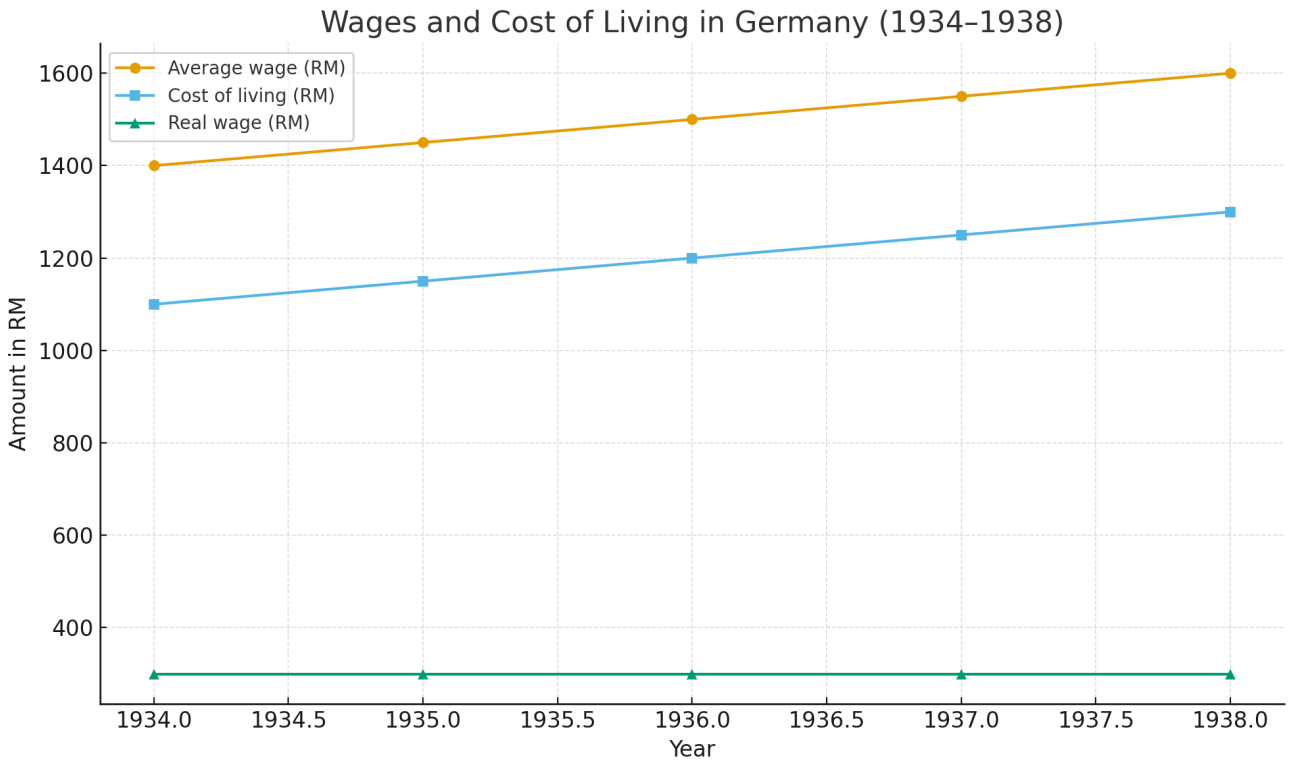
Chart 6. CPI conversion of MEFO bills



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

The value of MEFO bills (RM 12bn) expressed in US dollars at various years, CPI-adjusted. The curve traces the rising equivalent purchasing power, reaching ~USD 100bn in 2024 terms—illustrating the system's macroeconomic weight.

Chart 7. Wages, cost of living, and real income (1934–1938)



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

Average wage (RM), cost of living, and real disposable income during 1934–1938—i.e., the MEFO implementation window. Real income rises faster than the cost of living, supporting household demand—an important pillar of regime stabilisation and political acceptance.

> **Cross-reference:** See **Appendix A — Methodology Conversions & Sensitivity** for the exact CPI/deflator series, the 1938 RM→USD mapping ($0.40/RM), and sensitivity tables (±10–20% CPI; FX vs PPP).

References section — 5.A Inflation adjustment (CPI)

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven: Yale University Press, p. 106.
- Bureau of Labor Statistics (BLS) (2024) *CPI Inflation Calculator*. Accessed 2024.
- James, H. (1986) *The German Slump: Politics and Economics, 1924–1936*. Oxford: Oxford University Press, p. 246.
- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Penguin/Allen Lane, pp. 97–99.

Section Glossary — 5.A Inflation adjustment (CPI)

- **CPI (Consumer Price Index):** Price index tracking the cost of a representative consumer basket; used to translate past money amounts into present purchasing power.
- **Inflation multiplier:** Factor applied to convert a historical sum into today's prices using CPI (e.g., ~×21 from 1938 → 2024).
- **Real income:** Income adjusted for changes in the cost of living; proxy for purchasing power.
- **Purchasing-power equivalence:** Expression of a past amount in today's money that buys a comparable basket of goods/services.

> See earlier definitions: **MEFO / Mefo bills** (Chs. 1–3), **Off-budget** (1.Intro), **Reichsbank** (2.C.i).

Section 5.B - Analysis as a share of GDP

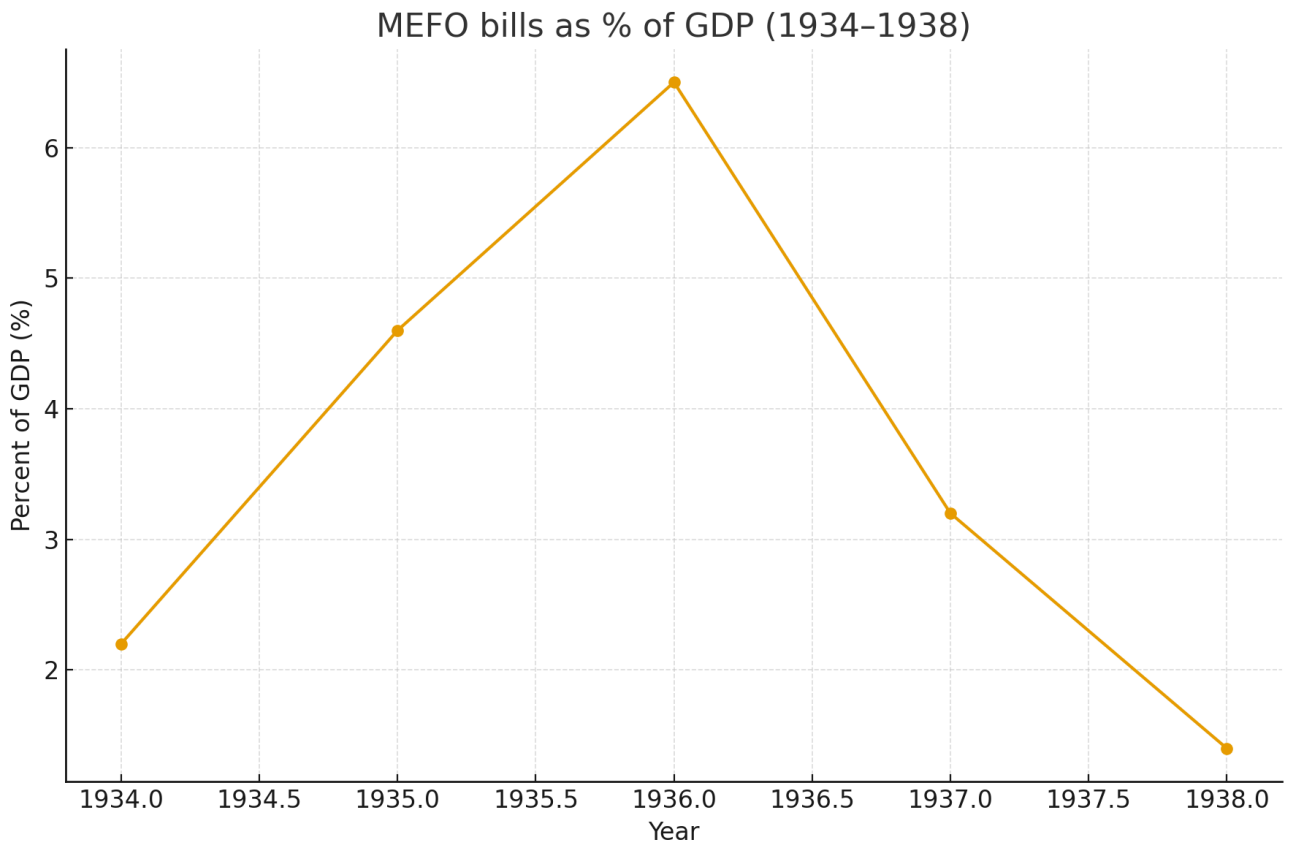
> **"When the state wants to arm, it always finds a way to pay. The question is how to do it without the markets noticing."**
> — *Hjalmar Schacht*

MEFO bills as a share of GDP: the unseen debt of rearming Germany

The founding of **Metallurgische Forschungsgesellschaft m.b.H. (MEFO)** in May **1934** enabled a covert financing trick for Nazi Germany's rearmament. By issuing **Mefo bills**—intermediate promissory notes drawn on MEFO but **guaranteed by the state**—the government channelled vast funds to the armaments sector **without alarming markets** and **without showing them in the published budget** *(Tooze 2006; Ritschl 2000)*.

Between **1934 and 1938**, cumulative issuance reached **around RM 12 billion**. Viewed against Germany's **gross domestic product (GDP)**, this scale reveals how far the regime's fiscal reality diverged from its official accounts *(Tooze 2006)*.

Chart 8. MEFO bills as a share of GDP (1934–1938)

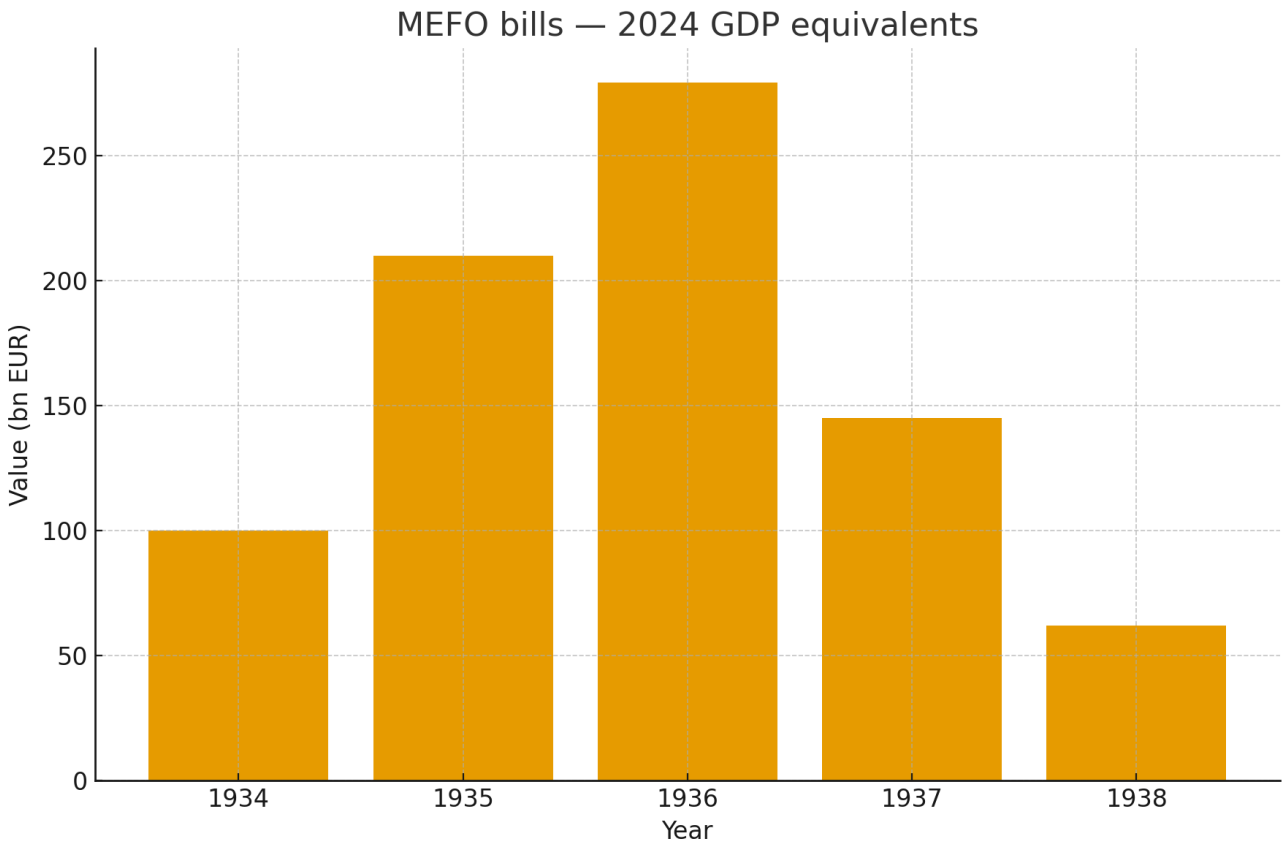


> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

Funding via Mefo bills **peaked in 1936**, when their volume amounted to **over 6% of GDP**, making the device one of the most significant mass-financing channels of the rearmament drive *(Overy 1994)*. Yet their **short tenor** (six-month notes, rollable up to five years) soon fed **liquidity needs at the Reichsbank** and **inflationary pressures** *(Ritschl 2000; James 1986)*.

Chart 9. What Mefo-scale issuance would mean today

(Germany's 2024 GDP ≈ €4.5 trillion)



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

Applying the historical Mefo-to-GDP ratios to today's German GDP implies that the **1936 peak** would correspond to roughly **€279 billion**. Summing the five-year 1934–1938 window yields **~€800 billion** in today's money—**war- or crisis-scale macro interventions** *(Destatis estimate for 2024 GDP)*.

The **phase-out from 1938** onward—together with rising recourse to **overt state borrowing** and, after 1939, **extractions from occupied territories**—marks Mefo bills as a **transitional expedient** that bought the regime time until the war economy could stand on its own *(Overy 1994)*.

References section — 5.B Analysis as a share of GDP

- James, H. (1986) *The German Slump: Politics and Economics, 1924–1936*. Oxford: Clarendon Press. 82
- Overy, R.J. (1994) *War and Economy in the Third Reich*. Oxford: Clarendon Press. 81
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Section Glossary — 5.B Analysis as a share of GDP

- **Debt rollover:** Renewing/rolling short-term notes at maturity (e.g., six-month Mefo bills up to five years).
- **GDP (gross domestic product):** Market value of all final goods and services produced within a country in a given period.
- **Liquidity pressure:** Strain on cash/reserve needs (here, at the Reichsbank) created by maturing paper or expanding discounting.
- **Peak ratio:** Highest Mefo-to-GDP share (~>6% in 1936).
- **Transitional expedient:** Temporary instrument used to bridge to a different financing regime (overt borrowing, wartime extraction).

> See earlier definitions: **MEFO / Mefo bills**, **Reichsbank** (Chs. 1–3).

Section 5.C - Comparative analysis with contemporary arms programs

> ***"The power of arms is not only a product of industry but a reflection of state will and imagination."***
> *— Reinhard Höhn, former official of the German administrative school*

Military power, though seemingly technical, embodies a state's core priorities. Nazi Germany's armaments drive (1933–1938) is a textbook case of **total mobilisation**, in which the economy is subordinated to political and military aims. The program not only overturned the Versailles constraints but also showcased **creative financial engineering** through the **Mefo bills**—off-budget promissory notes that **deferred the fiscal burden** by keeping the liabilities outside the published state accounts *(Tooze 2006)*.

The strategy rested on tight **state–industry coordination**, with Hjalmar Schacht overseeing the creation of the **Metallurgische Forschungsgesellschaft (MEFO)**, a shell issuer for the bills *(James 1995)*. By **1938**, Germany devoted **about 17.2% of GDP** to military purposes—**well above** modern peacetime analogues *(Overy 1994)*.

By contrast, the **United States** today sustains defence outlays of roughly **3.5% of GDP**; major procurement lines (e.g., **F-35 Joint Strike Fighter**) unfold over decades under **legislatively scrutinised** processes *(CBO 2023)*. **China** spends about **1.7% of GDP**, emphasising technological upgrading and self-reliance *(SIPRI 2023)*. **Russia**, despite fiscal

constraints, is estimated around **5.9%**, prioritising the renewal of strategic systems *(IISS 2023)*.

Table 6. Germany's 1933–1938 rearmament versus contemporary programmes

Criterion	Germany (1933–1938)	USA (2023)	China (2023)	Russia (2023)
Defence outlays (% GDP)	**17.2%**	**~3.5%**	**~1.7%**	**~5.9%**
Financing	**Indirect via Mefo bills**	Direct, on-budget	State budget	State budget (+ exports)
Transparency	**Hidden, off-budget**	High	Moderate	Low
Ideological orientation	Revisionism, revanchism	Superiority, deterrence	Regional primacy	Defensive nationalism

> Data sources and transformations: **see Appendix B — Data Provenance & Transformations**

Conclusion. The 1930s German programme stands out for **intensity, speed, and financing innovation**. Modern programmes are **long-horizon, institutionally overseen, and more transparent**, though each serves clear strategic purposes.

References section — 5.C Comparative analysis with contemporary arms programs

- Congressional Budget Office (CBO) (2023) *Long-Term Implications of the 2023 Defense Budget*. Washington, DC.
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Section Glossary — 5.C Comparative analysis with contemporary arms programs

- **Defence burden (% of GDP):** Share of national output devoted to military spending; a cross-country yardstick for effort and prioritisation.
- **Institutional scrutiny:** Legislative and audit oversight of procurement and budgeting (e.g., appropriations, public reporting).
- **Total mobilisation:** Reorientation of the economy toward military objectives, compressing civilian priorities.
- **Shadow financing:** Methods that obscure liabilities from headline budget figures (historically, Mefo bills; today, sometimes SPV-type structures).

> See earlier definitions: **Mefo bills / MEFO** (Chs. 1–3), **Off-budget financing** (1.Intro).

Chapter 6 — Political & Geostrategic Consequences

Section 6.A - The role of Mefo bills in the Wehrmacht's rearmament

> **"Politics is nothing but concentrated economics."**
> *Vladimir I. Lenin*

Mefo bills and the rearmament of the Wehrmacht (1934–1938)

German rearmament under Nazi rule was not merely a military priority; it became a **central axis of economic policy**. At the heart of this policy stood an innovative financing device: the **Mefo bill**—a hybrid between a bill of exchange and a bond—devised by **Hjalmar Schacht**, President of the **Reichsbank** and Reich Minister of Economics (Tooze 2006).

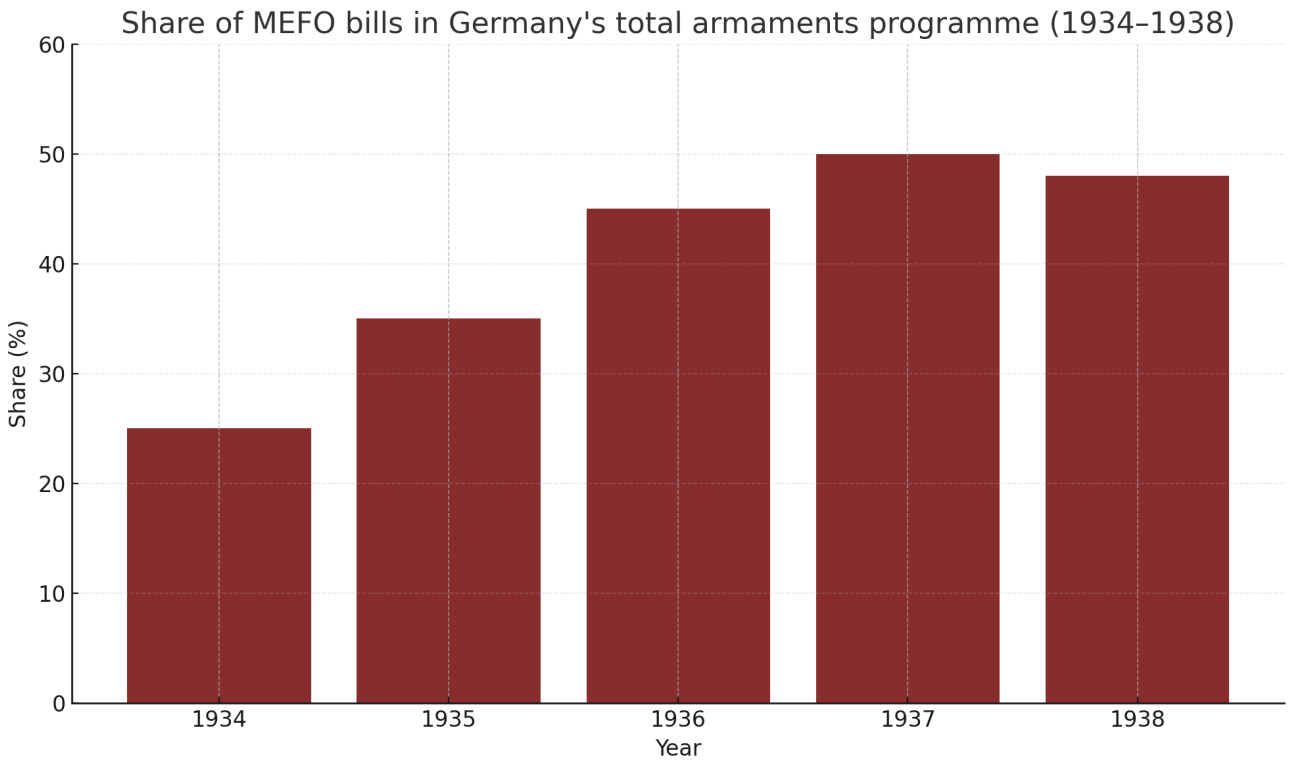
Issued by the shell company **Metallurgische Forschungsgesellschaft m.b.H. (MEFO)**, the bills enabled the government to pay for military orders **without recording the outlays in the published Reich budget**. Armaments firms (e.g., **Krupp, Siemens, Rheinmetall**) received payment in Mefo bills and could then present them to the **Reichsbank** for discounting; the notes carried **4% interest** and a **five-year maximum maturity**. The system rested on confidence that the state would honour its obligations—something that held until **1938** (Tooze 2006; Barkai 1990).

As Schacht told the Reichstag in 1935:

> *"With the Mefo bills we created a credit mechanism for the Fatherland, based not on gold or foreign currency but on the absolute certainty that the Reich keeps its promises."* (quoted in James 1986).

The appeal of Mefo bills lay in their ability to **sidestep Versailles-era constraints** and **avoid fiscal transparency**. By **1938**, issuance exceeded **RM 12 billion**, accounting for roughly **half of total military outlays** (Barkai 1990; Overy 1994).

Chart 10. Share of Mefo bills in total armaments spending, 1934–1938



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

The device can be seen as a precursor to modern **creative-accounting mechanisms**. Unlike the **New Deal** in the United States—which targeted recovery via social programmes—Nazi economic policy channelled resources to **maximise war-making capacity** (Overy 1994).

Success was not costless. As **1938** approached and redemptions fell due, the economy faced **liquidity strains**; together with strategic demands, this accelerated the turn to **autarky** and heightened dependence on **external expropriation** through conquest (Tooze 2006; Overy 1994).

References section — 6.A The role of Mefo bills in the Wehrmacht's rearmament

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. Oxford/New Haven: Berg–Yale.
- James, H. (1986) *The German Slump: Politics and Economics, 1924–1936*. Oxford: Clarendon Press.
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Section Glossary — 6.A The role of Mefo bills in the Wehrmacht's rearmament

- **Autarky:** Policy of economic self-sufficiency aimed at reducing reliance on foreign trade and finance.
- **Creative accounting:** Structuring transactions to alter the appearance of fiscal reality (here, keeping liabilities off the official budget).
- **Discounting (central-bank):** Purchase of short-term paper by the central bank before maturity in exchange for reserves/cash.
- **Liquidity strain:** Shortage of cash/reserves to meet maturing obligations (e.g., Mefo redemptions in 1938).
- **Wehrmacht:** The unified armed forces of Nazi Germany (army, navy, air force) from 1935 to 1945

> See earlier definitions: **Mefo bills / MEFO** (Chs. 1–3), **Reichsbank** (2.C.i), **Rediscounting** (3.B).

Section 6.B - Preparing for the Second World War

> **"Si vis pacem, para bellum."**
> *If you want peace, prepare for war (Latin maxim).*

The rise of National Socialism in 1933 coincided with deep social and economic crisis. Behind Hitler's promises of "bread and work" lay a plan to **reorganise and militarise** Germany's economy in preparation for a new major war. That preparation demanded vast resources, a radical redirection of production, and—above all—ways to **bypass the legal and fiscal constraints** imposed by the 1919 Treaty of Versailles.

The core of rearmament strategy was not only military but also **financial**. Here **Hjalmar Schacht**, President of the **Reichsbank** and later Reich Minister of Economics, devised a paradoxical plan: to arm Germany **without overtly increasing public debt**, without igniting **hyperinflation**, and without attracting the scrutiny of foreign creditors and observers.

The instrument of deception: MEFO and the Reich's "pseudo-bonds"

In **1934** the regime created **Metallurgische Forschungsgesellschaft, m.b.H. (MEFO)**, a shell company that existed solely as a **financing vehicle**. In MEFO's name the famous

MEFO bills were issued—**post-dated promissory notes** given as payment to firms producing weapons, vehicles and military equipment. The notes carried a **state guarantee**, yet did **not appear as on-budget public debt**. Thus the Reich could order tanks, aircraft and machine-guns without visibly breaching Versailles or derailing the public accounts.

> *"The invention of MEFO bills was an act of accounting magic—with Schacht's fingers pulling the strings behind the curtain."*

Rearmament under the guise of employment

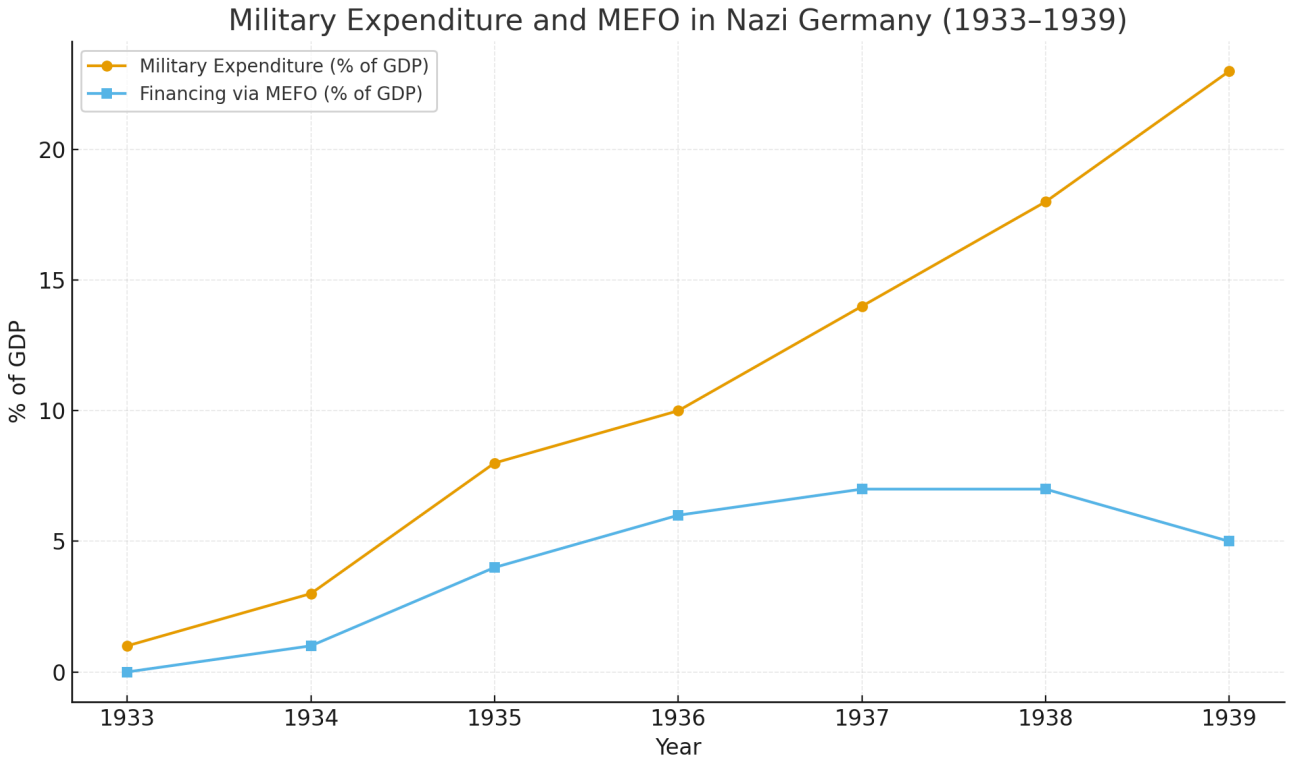
Rearmament was presented not as a military move but as a **job-creation programme**. MEFO financing mobilised heavy industry, construction companies and research institutes. Within a few years, unemployment plunged while raw-material stocks, supply routes and the production base were methodically **militarised**.

In parallel, **military outlays surged**—from roughly **1% of GDP in 1933** to **~8% in 1935**, and **well above 20% by 1939** *(History Learning Site; ResearchGate compilation)*.

A "war economy" before the war

Though politically conservative and wary of Nazi excesses, **Schacht** engineered Hitler's backstage financial strategy. Through MEFO and **hidden off-budget debt**, Germany was able by **1939** to field one of Europe's strongest armies **without formally violating** international obligations.

Chart 11. Germany's military expenditure as a share of GDP (1933–1939)



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

References section — 6.B Preparing for the Second World War

- History Learning Site (n.d.) *Nazi Germany: Military Expenditure*. Available at: https://www.historylearningsite.co.uk/nazi-germany/nazi-germany-military-expenditure/ (Accessed 2024).
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Section Glossary — 6.B Preparing for war (minimal, A→Z)

- **Disguised rearmament:** Military build-up presented as civilian/employment policy to avoid domestic and external scrutiny.
- **Hidden (off-budget) debt:** Liabilities kept outside the published state budget (e.g., MEFO bills) to defer recognition and control optics.
- **Militarisation of production:** Systematic retooling of industrial capacity, supply chains and research toward armaments output.

> See earlier definitions: **MEFO / Mefo bills**, **Reichsbank**, **Off-budget financing**.

Section 6.C - Relationship to the Four-Year Plan (*Vierjahresplan*)

> **"A people that cannot sustain itself economically will be defeated in any war."**
> — *Hermann Göring*

The launch of the **Four-Year Plan (*Vierjahresplan*)** in **1936** marked a watershed in Nazi economic policy. It signalled a shift away from Hjalmar Schacht's relatively liberal and "legality-conscious" approach toward an explicitly **war-directed, autarkic course** under the direct tutelage of **Hitler and Hermann Göring** *(Tooze 2006)*.

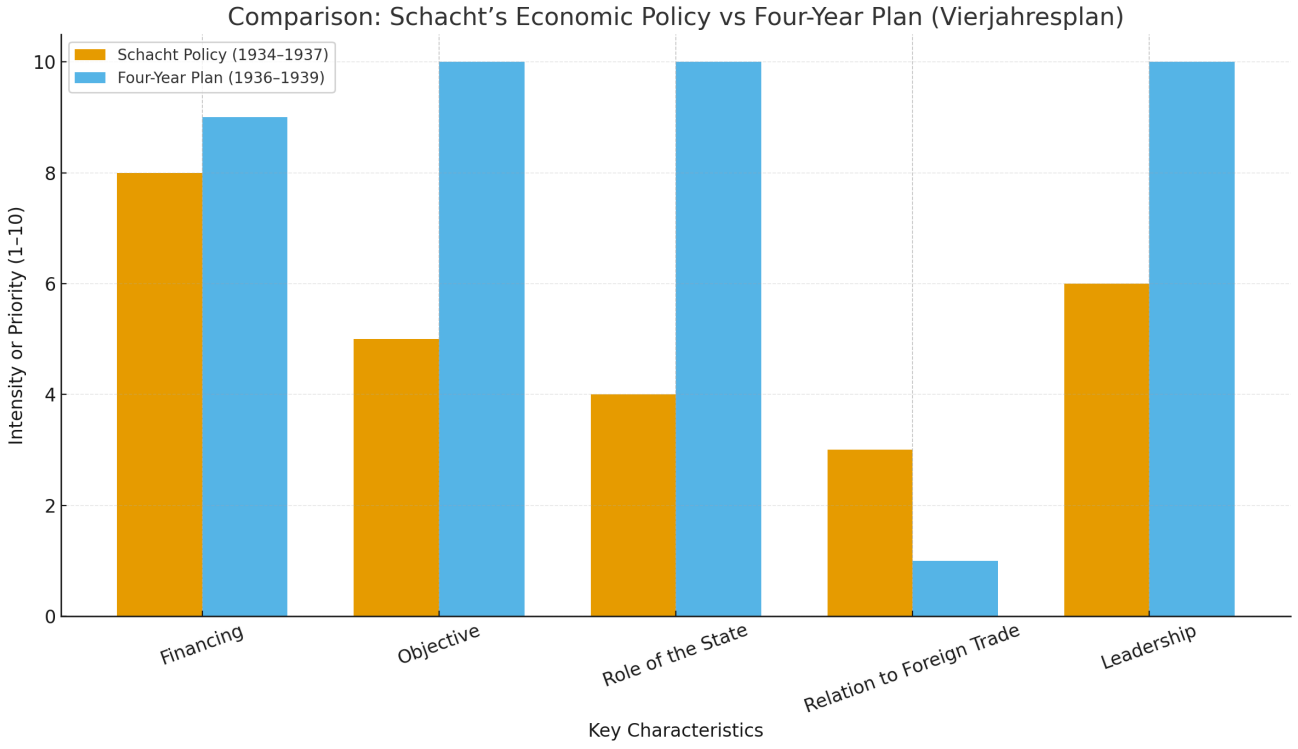
In practice the Four-Year Plan was more than a programme; it became the **institutional vehicle** for transforming Germany into an economy able to **sustain a future war** *(Overy*

1994). Frustrated by Schacht's cautions and fiscal limits, Hitler placed Göring in charge, granting him **supra-ministerial powers**.

The Plan's objective was unambiguous: **within four years** Germany should achieve **self-sufficiency in raw materials and food** and be **fully prepared for war** *(Evans 2005)*. At its core stood two priorities: (i) a surge in **synthetic fuels and rubber** (via **IG Farben** and **Buna-Werke**) and (ii) the acceleration of **armaments output**. This framework presupposed near-total **state intervention**, creating a **para-bureaucratic apparatus** operating largely outside traditional ministries *(Barkai 1990)*.

The Plan's relationship to Schacht's policies was **dual**. On the one hand, it **built on his successes**, notably the **Mefo bills** that financed the first rearmament wave. On the other, it **rejected** Schacht's **monetary discipline** and balance-of-payments focus under the **"Neue Plan" (1934)**. Rising military outlays and detachment from world markets amounted to a **de facto abandonment** of that earlier regime *(Tooze 2006)*. Seeing drift toward uncontrolled inflation and a militarised economy, **Schacht resigned** as Economics Minister in **1937** *(Overy 1994)*.

Chart 12. Schacht's economic policy (1934–1937) vs. the Four-Year Plan (1936–1939)



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

The figure illustrates the transition from a financing model built on **innovative devices** such as Mefo bills to a **state-directed war economy**. It highlights the heightened **state**

intervention, near **severance from foreign trade**, and the **centralised leadership** of economic policy under the *Vierjahresplan*.

The Four-Year Plan was not merely an economic orientation; it was a **political manifesto**—a clear statement of Hitler's intention to **lead Germany into a war of conquest**. **"Wirtschaft als Waffe"**—*the economy as a weapon*—became a governing principle, with the *Vierjahresplan* as its operational tool *(Göring, 1936)*.

References section — 6.B Relationship to the Four-Year Plan (*Vierjahresplan*)

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. Oxford/New Haven: Berg–Yale.
- Evans, R.J. (2005) *The Third Reich in Power*. London: Penguin.
- Göring, H. (1936) 'Der Vierjahresplan' (speech).
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- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane.

Section Glossary — 6.C Relationship to the Four-Year Plan (*Vierjahresplan*)

- **Buna (synthetic rubber):** Artificial rubber produced in Germany (IG Farben/Buna-Werke) to reduce import dependence.
- **Four-Year Plan (*Vierjahresplan*):** 1936 programme under Göring granting supra-ministerial powers to ready Germany for war and self-sufficiency in four years.
- **IG Farben:** Chemical conglomerate central to synthetic fuel and rubber programmes supporting autarky and rearmament.
- **Neue Plan (1934):** Schacht's earlier trade-and-payments regime aimed at stabilising the balance of payments via controls and bilateral clearing.
- **Para-bureaucracy:** Extra-ministerial agencies and offices that bypassed standard ministries to execute the Four-Year Plan.
- **Wirtschaft als Waffe:** "Economy as a weapon"; doctrine treating economic policy as an instrument of war preparation.

> See earlier definitions: **Mefo bills / MEFO**, **Autarky** (6.A).

Chapter 7. Collapse of the System (1938–1939)

Section 7.A - Redemption Pressure on the Bills

> **“The prolonged refusal to face reality rarely averts its consequences.”**
> *— Friedrich August von Hayek*

The introduction of **MEFO bills** was an ingenious yet hazardous device to finance the early job-creation programmes and, later, Nazi Germany’s aggressive rearmament. From the spring of 1935 to March 1938, *Mefo bills* covered **more than one third of military expenditure**, becoming the primary funding source for rebuilding the German war machine *(Tooze 2007)*.

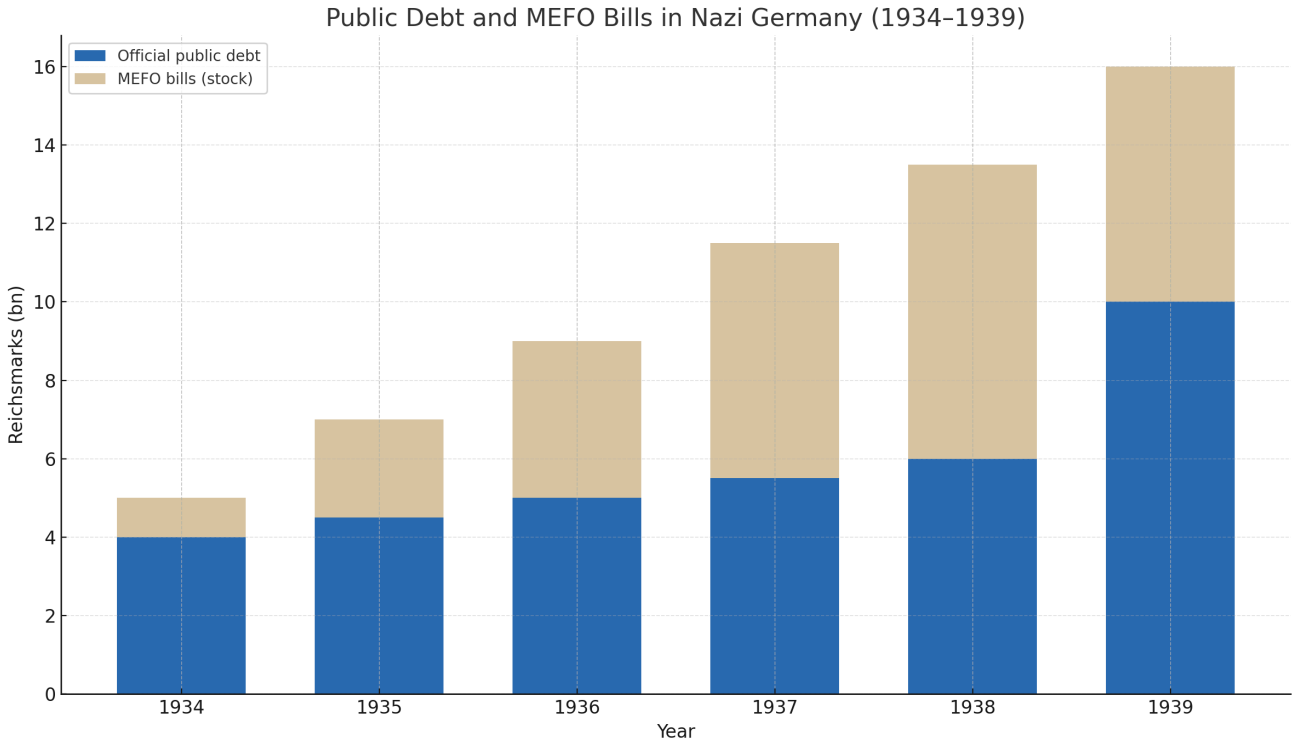
Their success also planted the seeds of their destabilisation. The mass issuance of these bills produced a **huge stock**, which **expanded six-fold between 1935 and 1938**. By March 1938, *Mefo bills* had become the **dominant component of total public indebtedness**—even though, owing to their sui generis nature, they were **absent from the official debt statistics** *(James 1986)*. This “invisible” swelling heightened doubts about transparency and the medium-term sustainability of the Reich’s public finances.

Despite a **4% coupon** and a **state guarantee**, the bills’ wide diffusion among banks and firms meant that the risk of a **sudden wave of rediscounting at the Reichsbank** always lurked in the background *(Barkai 1990)*. The Reichsbank, hoping that full employment would keep the pressure at bay, **underestimated the dynamics of this hidden debt**.

In the **summer of 1938** the danger sharpened when **Hitler demanded a rapid, massive expansion of the armed forces**, well beyond the General Staff’s earlier projections *(Overy 1994)*. This new phase of rearmament made it clear that the existing MEFO framework was **insufficient and risky**. Redemption pressure, already simmering, threatened to spill over into a **financial crisis**.

Recognising that further expansion of the MEFO system would carry serious consequences, the government decided in **1938** to **terminate** it *(Turner 1985)*. In its place, it introduced **direct issues of state loans**, pushing up the **reported public debt by roughly 30% in the single fiscal year 1938/39**. The shift tacitly acknowledged that the open-ended use of parallel credit mechanisms had reached the limit of its effectiveness.

Chart 13. Public Debt and MEFO Bills (evolution, 1934–1939)



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

Explanation: The chart plots the evolution of **total public debt** from 1934 to 1939, shading **MEFO bills** (beige) versus **official public debt** (blue). Up to 1938, MEFO bills accounted for the larger share of obligations. After 1938—under Hitler's intensified rearmament drive—**official debt** rises sharply, signalling the transition to **open, conventional borrowing** *(derived from Tooze; Barkai)*.

The end of the *Mefo bills* was not merely a technical change. It reflected the regime's deeper turn to **direct mobilisation of all Reich resources for war**, abandoning the pre-1938 pretence of balancing economic prudence with political strategy.

References section — 7.A Redemption Pressure on the Bills

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven/Oxford: Yale University Press.
- James, H. (1986) *The German Slump: Politics and Economics 1924–1936*. Oxford: Oxford University Press.
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University Press.

Section Glossary — 7.A Redemption Pressure on the Bills

- **Hidden debt (off-balance-sheet debt):** Liabilities not recorded in the official public-debt statistics (e.g., MEFO bills prior to 1938), masking the state's true leverage.
- **Liquidity squeeze:** Situation where banks or the state face acute cash needs because many bills are presented for payment/rediscount at once.
- **Open (conventional) borrowing:** Issuance of standard, on-budget government bonds/loans that visibly increase reported public debt.
- **Redemption pressure:** Rising likelihood that holders present bills for payment as maturities roll in, stressing cash and central-bank reserves.
- **Reported public debt:** Officially recorded government liabilities that exclude hidden/off-budget instruments.
- **Rollover cap (five-year limit):** Maximum extension horizon of MEFO bills which created a maturity "bulge" around 1938.
- **Stock (outstanding):** The face value of bills or debt instruments outstanding at a given date.
- **Transparency gap:** The discrepancy between real fiscal/monetary commitments and what is disclosed in public accounts..

> See earlier definitions: **Mefo bills** — Chapter 1, §C glossary; **Reichsbank** & **Rediscounting** — Chapter 3, §B glossary.

Section 7.B - Exhaustion of Reichsbank Liquidity

> **"The economy is like a machine: you can force it beyond its limits, but only briefly before it breaks."**
> — *Anonymous interwar economist*

As the Third Reich accelerated its rearmament drive, the financing devices invented to fund massive outlays began to show their limits. The **Mefo bills** system—devised to absorb the armaments sector's cash needs off-budget—ultimately rested on the assumption that the **Reichsbank** would provide liquidity when the bills reached maturity *(Tooze 2006: 98–102)*.

For several years, this artificial expansion of the monetary base seemed to operate without obvious inflationary pressure; most investors and citizens remained unaware of the surge in latent public liabilities. Yet, as with most "creative" finance, the problem was merely deferred.

During the build-up, **contractors issued Mefo bills**, which commercial banks discounted and then **rediscounted with the Reichsbank** *(Overy 1994: 43–46)*. By the **autumn of**

1938, the Reichsbank acknowledged that the **Reichsmark** was no longer fully stable and that **inflationary forces** had begun to surface—even if not yet dramatic *(Tooze 2006: 150)*.

From **1937**, **Hjalmar Schacht** warned that the stock of Mefo bills had swollen to a level where large-scale redemption would require cash the system simply did not have *(Schacht 1967: 243)*. His attempt to tighten policy ran up against Hitler's doctrine of **"guns before butter"** (*Kanonen statt Butter*) *(context in Overy 1982: 284)*.

By the **spring of 1938**, the Reichsbank was pushed into **monetary creation** despite earlier resistance. The failed **government bond** issue of **November 1938** revealed the economy's overload: market appetite for new debt was insufficient, signalling eroding confidence *(Overy 1982: 284)*.

The Bank's position turned critical. Facing cash-flow gaps and the risk that the Reich would miss payments, it resorted to drastic measures: **selling reserve assets**, tapping the **overdraft facilities of the Reichspost and the Reichsbahn**, and covering the remaining shortfall through **direct note issue** *(Tooze 2006: 189–191)*.

The breaking point came in **June 1939**, when the **Reichsbank charter was revised**: statutory limits on money creation were removed and **Hitler**, as Führer, obtained plenary authority to determine the money supply *(Tooze 2006: 193)*. From then on, the Reich's economy moved openly under military imperatives rather than monetary-policy rules.

During the war, the Reichsbank's **clearing system** allowed Germany to accumulate vast trade deficits with occupied countries: exporters were paid in local currency by their central banks, while the corresponding **German liabilities** were posted to **clearing accounts in Berlin**—balances that were never settled *(James 1986: 271)*. By **late 1944**, roughly **RM 30 billion** was recorded as owed by members of the clearing bloc.

In short, the **exhaustion of Reichsbank liquidity** was not a narrow technical issue; it presaged a political-economic destabilisation that pushed the regime towards external expansion to maintain internal cohesion—a trajectory that culminated in global war.

References section — 7.B Exhaustion of Reichsbank Liquidity

- James, H. (1986) *The German Slump: Politics and Economics 1924–1936*. Oxford: Clarendon Press, p. 271.
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Section Glossary — 7.B Exhaustion of Reichsbank Liquidity

- **Clearing accounts:** Book-entry balances kept between Germany and occupied countries during the war; local exporters were paid domestically while Germany's obligations accumulated in Berlin and were not settled.
- **Direct note issue:** Expansion of the money supply via the central bank printing additional banknotes rather than borrowing from markets.
- **Monetary base expansion:** Increase in central-bank money (banknotes and reserves) that fuels banking-system liquidity.
- **Overdraft facilities (Reichspost / Reichsbahn):** Short-term credit lines from state enterprises used by the Reichsbank to bridge cash gaps.
- **Reserve asset sales:** Disposals of securities or gold by the central bank to obtain cash liquidity.
- **Statutory revision (June 1939):** Change to the Reichsbank law removing formal constraints on money creation and assigning discretionary control to Hitler.

Section 7.C - Shift to Other Instruments (Reichsschuldenverwaltung bonds)

> **"A state's power rests not only on the sword but on the trust of its creditors."**
> — *contemporary German saying*

By the late 1930s, Nazi Germany's rearmament needs had outgrown the **Mefo bills** framework *(Tooze 2006: 146–147)*. As a workaround to budget scrutiny and transparency, Mefo bills were agile—but they carried a built-in horizon: each note had to be redeemed or rolled within **five years** *(Barkai 1990: 134)*.

In **1938**, as more bills neared maturity, Hitler's government faced a stark choice: either inflate via overt money creation or pivot to more **institutional** borrowing channels *(James 1986: 210)*. The answer came through the **Reichsschuldenverwaltung**—the Reich Public Debt Administration *(Overy 1994: 120–121)*.

The Reichsschuldenverwaltung organised the placement of **government bonds** and **Treasury bills**, targeting German **banks**, **insurance funds**, and other institutional investors *(Barkai 1990: 136)*. State support was frequent—both direct and indirect—effectively **requiring** financial institutions to absorb the new paper *(Turner 1985: 288–289)*.

Table 7. Technical profile — Reichsschuldenverwaltung bonds

Feature	Description
Face value	Typically RM 1,000 or RM 10,000 *(Tooze 2006: 150)*
Coupon	Variable, usually **4%–6%** per year *(Tooze 2006: 150)*
Maturity	**5–15 years** *(Turner 1985: 288–289)*
Redemption	Bullet maturity (principal due at end) *(Tooze 2006: 150)*
Buyers	Banks, insurance funds, institutions *(Overy 1994: 125)*
Security	No collateral; **sovereign guarantee**

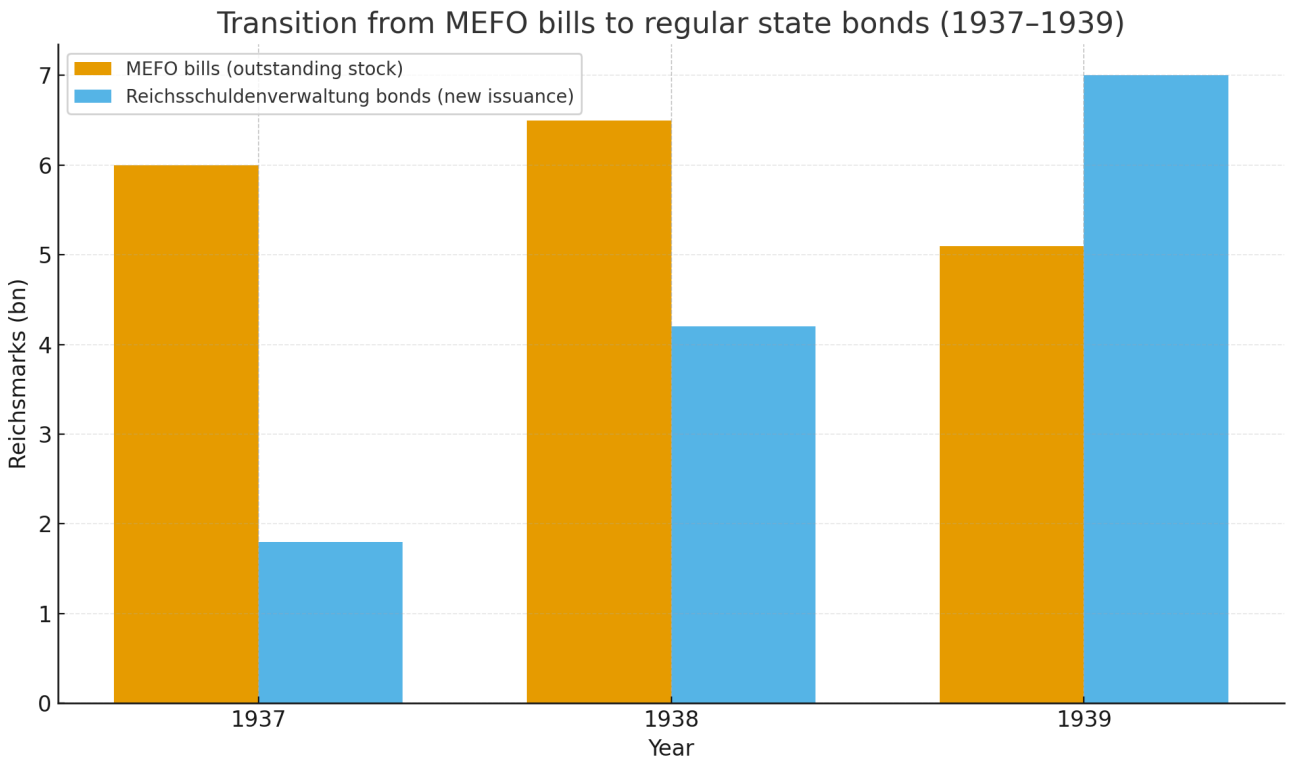
Table 8. Quantitative snapshot — funding needs and coverage

Year	MEFO bills outstanding (RM bn)	New Reichsschuldenverwaltung bonds (RM bn)
1937	6.0	1.8
1938	6.5 (peak)	4.2
1939	5.1 (partial redemption)	7.0

> **Note:** In **1938**, roughly **65%** of new Reich financing was covered by “official” government bonds; the rest by temporary borrowing *(Barkai 1990: 137)*.

Germany’s **reported public debt** rose from about **RM 14 bn in 1933** to **RM 32 bn in 1939**, **excluding** many “invisible” commitments *(Tooze 2006: 155)*.

Chart 14. Transition from MEFO bills to regular state bonds (1937–1939)



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

References section — 7.C Shift to Other Instruments (Reichsschuldenverwaltung bonds)

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Section Glossary — 7.C Shift to Other Instruments (Reichsschuldenverwaltung bonds)

- **Bullet maturity:** Bond structure where principal is repaid in full at final maturity (no amortisation).

- **Forced placement:** Non-market placement of public debt with domestic institutions under explicit or implicit state pressure.
- **Institutional borrowing channel:** Fund-raising via regulated investors (banks, insurers, pension/relief funds) rather than central-bank monetisation.
- **Reichsschuldenverwaltung:** Reich Public Debt Administration responsible for issuing and managing the Reich's marketable debt instruments (bonds/T-bills).
- **Roll-over horizon (five-year limit):** Maximum extension window on Mefo bills that drove the redemption "bulge" in 1938–1939.

Cross-references: For **Mefo bills** and **hidden debt**, see Chapter 7, §A glossary; for **rediscounting** and **Reichsbank**, see Chapter 3, §B glossary.

Chapter 8. Conclusions

Section 8.A - Appraising the Mechanism's Effectiveness

> **"Numbers do not lie; it is people who lie with numbers."**
> — *Hjalmar Schacht*

Appraisal of the MEFO Mechanism's Effectiveness

The creation of **MEFO Ltd.** (*Metallurgische Forschungsgesellschaft m.b.H.*) and the circulation of its eponymous bills (*Mefo-Wechsel*) formed the cornerstone of financing Germany's rearmament between **1934 and 1938**. This was a device of **monetary ingenuity**, operating in the shadows, that bypassed both the limits of the **Monetary Law** and the international oversight exercised by the victors of the First World War.

The **effectiveness** of the mechanism can be assessed across three dimensions: **macroeconomic stability**, **operational functionality**, and **politico-economic consequences**.

1) Macroeconomic Stability and Inflation

The primary indicator of success was the **absence of an immediate inflationary shock**. Although money was effectively created through a **parallel system** (MEFO bills did not appear in the budget), Schacht managed to **absorb excess demand via price/consumption controls** and—crucially—by **segregating the circulation** of bills from the wider market *(Tooze 2006)*. Germany's GDP grew by roughly **9% per year between 1934 and 1938** without a repeat of the hyperinflation of **1922–1923** *(Overy 1994)*.

2) Operational Functionality and Liquidity

MEFO bills provided **liquidity to armaments industries** without an immediate cash outlay from the Treasury. Firms could redeem them through the **Reichsbank**, enjoying a **state guarantee** while the liabilities remained **off-budget**. Their **five-year horizon** with **early-redemption options** added flexibility, allowing policy to adjust to monetary conditions. Between **1934 and 1938**, total issuance reached **RM 12 billion**, a vast sum largely channelled to armaments and infrastructure _(Barkai 1990).

3) Politico-Economic Consequences and Long-Run Costs

The mechanism's **strength was also its weakness**: its reliance on **secrecy** made it inherently non-durable. After **Schacht's resignation in 1937**, the Economics Ministry under **Walther Funk**, and Göring's **Four-Year Plan**, faced the **redemption hump**, precipitating a rise in **reported public debt** and heightening inflation risk *(Tooze 2006)*. At the same time, MEFO **masked the true scale of rearmament** from international observers, reinforcing the regime's **authoritarian economic governance** and offering a template for later **illiberal fiscal experiments**.

Conclusions

In the **short run**, MEFO was **highly effective**: it delivered rapid liquidity without visible macroeconomic side-effects and enabled Germany's shift from depression to war preparation. Yet this success rested on **opacity**, **financial manipulation**, and **political absolutism**—features that, in the **long run**, undermined fiscal stability and contributed to the Reich's dependence on **expansion and expropriation** beyond its borders.

References section — 8.A Appraising the Mechanism's Effectiveness

- Barkai, A. (1990) *Nazi Economics: Ideology, Theory, and Policy*. New Haven/Oxford: Yale University Press.
- Overy, R.J. (1994) *War and Economy in the Third Reich*. Oxford: Oxford University Press.
- Tooze, A. (2006) *The Wages of Destruction: The Making and Breaking of the Nazi Economy*. London: Allen Lane.

Section Glossary — 8.A Appraising the Mechanism's Effectiveness

- **Early redemption option:** Feature allowing the issuer or holder to settle a bill/bond before final maturity, used to manage cash-flow and policy timing.
- **Monetary Law (Germany):** The legal framework governing note issue, payments and banking; MEFO operated by skirting its spirit through off-budget instruments.
- **Opacity (fiscal/monetary):** Deliberate non-disclosure or under-reporting of liabilities and flows so as to mute scrutiny and delay market response.
- **Parallel system (off-budget):** Financing outside the formal state accounts that creates money-like liabilities without appearing in reported public debt.
- **Redemption hump:** Clustered maturities that force large repayments or rollovers in a short window, raising liquidity and inflation risk.

> *Cross-references:* For **MEFO bills**, **Reichsbank**, and **rediscounting**, see earlier glossaries (Ch. 3 §B; Ch. 7 §A–B).

Section 8.B - Risks of "creative accounting"

> **"Accounting should tell the truth. When it becomes an art of deception, numbers turn into weapons."**
> — *Anonymous*

In its purest form, accounting aspires to mirror economic reality. In practice, however, rules and grey areas often permit a more “creative” portrayal. **Creative accounting** is not necessarily illegal, but it poses serious risks for firms and for the wider financial system. Its core trap is the unseen shift from interpreting facts to *manufacturing* them. Techniques include **pushing profits into the future**, **artificially reducing debt via structured transactions**, or using **off-balance-sheet vehicles** to hide obligations *(Ferguson 2008)*.

When creative accounting spreads, investors are misled, markets are destabilised once truth surfaces, and institutions are corroded as audit and oversight lose credibility *(Power 1997)*. The best-known episodes range from **Enron**’s collapse *(McLean & Elkind 2003)* to accounting artifices preceding Greece’s sovereign-debt crisis *(Dunbar 2011)*. The **Lehman Brothers** case (2008) is emblematic: the *Repo 105* structure dressed short-term borrowings as sales to make liabilities “vanish,” enabled by weak supervision and audit failure *(Valukas 2010)*. As **John Kenneth Galbraith** observed, “financial fraud is rarely a solitary act; it is the product of collective acceptance” *(Galbraith 1955)*.

Table 9. Core techniques of creative accounting

Technique	Description
Income/expense shifting across periods	Timing revenues/expenses to beautify specific reporting windows
Off-balance-sheet vehicles	Hiding liabilities via subsidiaries or purpose-built entities
Repo agreements	Using repos to make debt temporarily disappear from the balance sheet
Optimistic asset valuation	Inflating asset values through aggressive assumptions
Premature revenue recognition	Booking profits before cash collection or performance fulfilment

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

Creative accounting does not flourish in a vacuum: it thrives where regulatory tolerance is high, oversight is weak, and political complicity is present. In such settings, numbers cease to inform and start to obscure—undermining the trust that market economies depend on *(Brooks 2018)*.

References section — 8.B Risks of “creative accounting”

- Brooks, R. (2018) *Bean Counters: The Triumph of the Accountants and How They Broke Capitalism*. London: Atlantic Books.
- Dunbar, N. (2011) *The Devil's Derivatives*. Boston: Harvard Business Review Press.
- Ferguson, N. (2008) *The Ascent of Money: A Financial History of the World*. New York: Penguin Press.
- Galbraith, J.K. (1955) *The Great Crash 1929*. Boston: Houghton Mifflin.
- McLean, B. and Elkind, P. (2003) *The Smartest Guys in the Room: The Amazing Rise and Scandalous Fall of Enron*. New York: Portfolio.
- Power, M. (1997) *The Audit Society: Rituals of Verification*. Oxford: Oxford University Press.
- Valukas, A.R. (2010) *Lehman Brothers Holdings Inc. Chapter 11 Examiner's Report*. United States Bankruptcy Court.

Section Glossary — 8.B Risks of "creative accounting"

- **Earnings management:** Deliberate timing/measurement choices within GAAP/IFRS to shape reported profits without outright rule-breaking.
- **Income smoothing:** Reducing volatility in reported earnings by shifting revenues/expenses across periods to present a stable trend.
- **Optimistic asset valuation:** Upward-biased assumptions (discount rates, growth, impairments) that inflate balance-sheet values.
- **Premature revenue recognition:** Recording revenue before performance obligations or collectability are reasonably assured.
- **Repo 105:** Lehman's variant of repurchase agreements structured to book borrowings as sales, temporarily lowering reported leverage.
- **Window dressing:** End-period transactions designed solely to improve reported ratios/appearance at the reporting date.

Cross-references: For **off-balance-sheet vehicles/SPVs**, see Chapter 4, §C glossary.

Section 8.C - Contemporary analogues (e.g., shadow finance)

> **"The state does not borrow only from markets—it also borrows from its own imagination."**
> *– A paraphrase describing how shadow finance operates*

MEFO's modern analogues: from Mefo bills to shadow banking

The creation of **MEFO** (*Metallurgische Forschungsgesellschaft m.b.H.*) and the use of its eponymous **Mefo bills** in Nazi Germany offer a historical case of financial ingenuity aimed at

funding fiscal shortfalls **off the official budget**. Although time-bound, MEFO's structures strikingly foreshadow later forms of **shadow finance** in contemporary capitalism.

At the core of **shadow banking** lies the same objective: to open funding channels **outside formal regulatory perimeters**, with little immediate reflection in public-debt ledgers or bank balance sheets. In place of Mefo bills, today's system relies on **special-purpose vehicles (SPVs/SIVs)**, **repos**, **collateralised debt obligations (CDOs)** and related constructions that extend credit and supply liquidity while **obscuring aggregate leverage** *(Pozsar et al. 2010)*.

Illustrative cases

1) Structured Investment Vehicles (SIVs) — Citigroup (2007).
Citigroup used SIVs to shift subprime exposures off balance sheet. Like MEFO, these conduits enabled **external funding under an implicit sponsor backstop**, keeping risks out of headline statements *(Acharya, Schnabl & Suarez 2013)*.

2) Repos (Repurchase Agreements) — Lehman Brothers & Bear Stearns.
Repos supported large, short-term leverage until confidence cracked. The "quiet network of trust" functioned much like the Mefo dynamic: **funding flowed while faith held; once trust failed, liquidity vanished** *(Pozsar et al. 2010)*.

3) Swaps — Greece & Goldman Sachs (2001).
Derivatives were structured to **mask parts of the debt profile**, meeting Maastricht optics. As with MEFO, transactions were **lawful yet politically opaque** *(Steil 2013)*.

4) China's LGFVs.
Local Government Financing Vehicles fund infrastructure **off budget**, often under **implicit public guarantees**—a large-scale, contemporary analogue of state-adjacent financing that shifts risks outside headline fiscal accounts *(Tooze 2018)*.

Table 10. Analogue mapping of shadow-finance models

Historical example	Modern counterpart	Core similarity
Mefo bills (1934–38)	SPVs/SIVs (e.g., Citigroup)	Off-balance-sheet leverage
Reichsbank guarantee	Central-bank/sovereign bailouts	Implicit/explicit public backstops
Rearmament via MEFO	China LGFVs	Quasi-fiscal outlays off budget
Accounting opacity	Greece–Goldman swaps (2001)	Liability concealment/re-profiling

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

References section — 8.C Contemporary analogues (e.g., shadow finance)

- Acharya, V., Schnabl, P. and Suarez, G. (2013) ‘Securitization without risk transfer’, *Journal of Financial Economics*, 107(3), pp. 515–536.
- Pozsar, Z., Adrian, T., Ashcraft, A. and Boesky, H. (2010) *Shadow Banking*. Federal Reserve Bank of New York Staff Report No. 458.
- Steil, B. (2013) *The Battle of Bretton Woods*. Princeton, NJ: Princeton University Press.
- Tooze, A. (2018) *Crashed: How a Decade of Financial Crises Changed the World*. New York: Viking.

Section Glossary — 8.C Contemporary analogues (e.g., shadow finance)

- **CDO (Collateralised Debt Obligation):** Structured credit product pooling loans/bonds into tranches with distinct risk/return.
- **Implicit guarantee:** Unstated market belief that a state or sponsor will step in during stress, reducing funding costs ex ante.
- **LGFV (Local Government Financing Vehicle):** Chinese issuer used by local authorities to fund projects *off budget* under presumed public backing.
- **Shadow banking:** Credit intermediation outside the regulated, deposit-taking banking core, reliant on market funding and collateral chains.
- **SIV (Structured Investment Vehicle):** Off-balance-sheet conduit that funds long-term assets with short-term paper, depending on rollover and sponsor confidence.

Cross-references: For **SPVs** and **off-balance-sheet financing**, see Chapter 4, §C; for **repos**, see Chapter 8, §B glossary/table.

Chapter 9. Appendices

Section 9.A - Tables with CPI / GDP / Exchange Rates

Germany’s Economic Indicators (1930–1939)

Germany’s economy in the 1930s underwent sharp swings due to the Great Depression, the rise of the Nazi regime, and rearmament financing mechanisms such as **Mefo bills**. CPI, GDP, and the RM/USD exchange rate trace the country’s macroeconomic trajectory.

Table 11. Consumer Price Index (CPI)

Year	CPI Index (1930 = 100)
1930	100.0
1931	95.2
1932	89.1
1933	87.5
1934	88.2
1935	89.9
1936	91.7
1937	93.1
1938	94.4
1939	95.8

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

Table 12. Gross Domestic Product (GDP)

Year	GDP (bn RM)
1930	53.5
1931	48.3
1932	42.9
1933	44.5
1934	48.1

Year	GDP (bn RM)
1935	52.2
1936	57.2
1937	62.4
1938	68.4
1939	75.0

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

Table 13. Reichsmark/USD Exchange Rate

Year	RM per USD
1930	4.19
1931	4.21
1932	4.23
1933	3.28
1934	2.50
1935	2.50
1936	2.50
1937	2.50
1938	2.50
1939	2.50

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

Visualisation of Economic Data

Chart 15. CPI 1930-1939

- **Germany: Consumer Price Index (CPI), 1930–1939 (1930 = 100)**

```
![[germany_cpi_1930s.png]]
```

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

Chart 16. GDP 1930-1939

- **Germany: GDP, 1930–1939 (billion Reichsmark)**

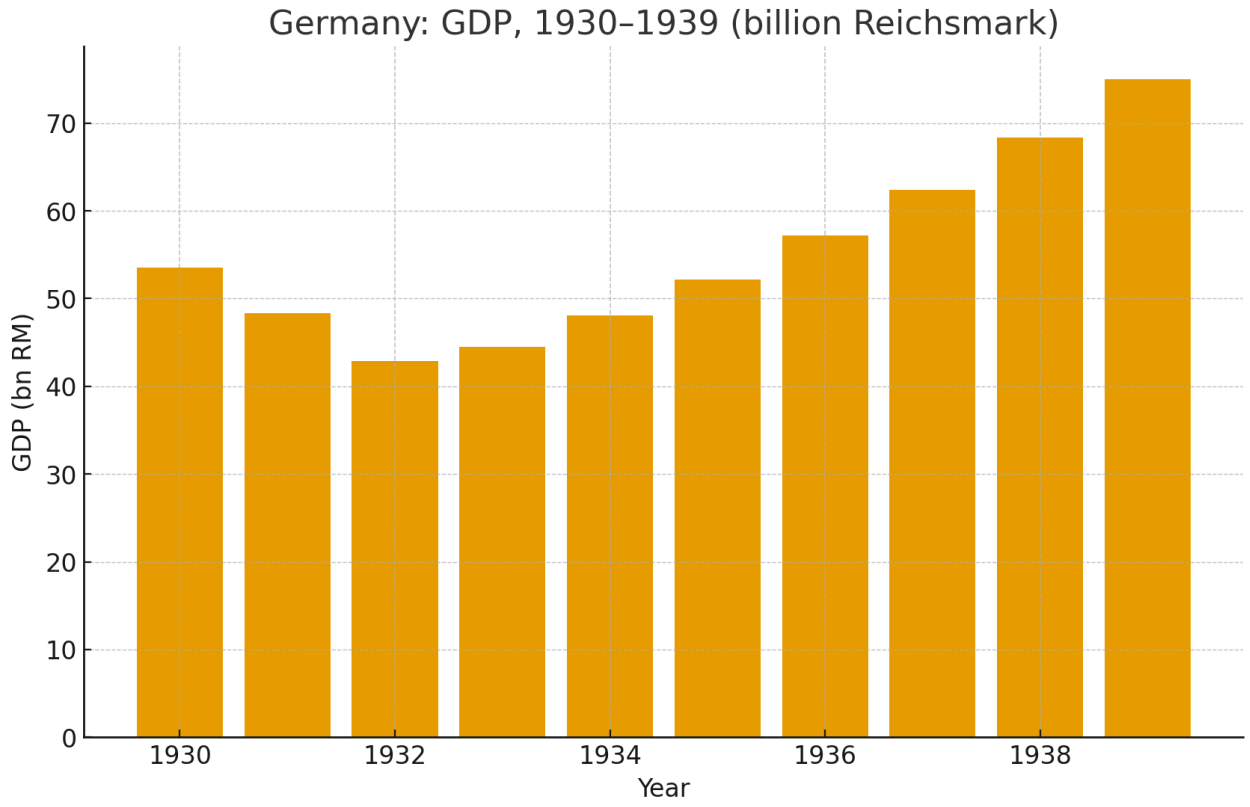

Chart 17. RM per USD, 1930–1939

- **Germany: RM per USD, 1930–1939**

```
![[germany_rm_usd_1930s.png]]
```

> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**

References section — 9.A Tables with CPI / GDP / Exchange Rates

- Cambridge University (Journal of Economic History). “The Borchardt hypothesis: a cliometric reassessment of Germany’s debt and crisis during 1930–1932.” *Journal of Economic History*.
- Maddison Project Database. “Historical GDP and CPI estimates.”

- Paper Dragon. “Historical Exchange Rates.” Available at: Paper-Dragon (accessed 2024).

Section Glossary — 9.A Tables with CPI / GDP / Exchange Rates

- **Base year:** The reference year used to set an index to 100 (here, 1930 for CPI), so later values show relative change.
- **Chain-linking:** A method for joining short index series into a longer time series while preserving growth rates across sub-periods.
- **Deflation (1930–33):** A sustained fall in the general price level during the early Depression, visible in the CPI drop from 100 to ~87.5.
- **Index number:** A normalised statistic (e.g., CPI = 93.1) expressing change versus the base year, not a currency amount.
- **Maddison Project Database (MPD):** A historical data source for long-run GDP/CPI estimates used to populate or benchmark the series.
- **Nominal series:** Values recorded in current-period prices (e.g., GDP in RM of the year shown), not adjusted for inflation.
- **Re-basing:** Resetting an index to a new base year (e.g., 1930 = 100) to ease comparisons across time.
- **RM per USD:** Quotation of the exchange rate as Reichsmark per US dollar; lower values indicate a stronger RM against USD

Chapter 10. Bibliography

Section 10.A - Historical Repositories & Reference

Encyclopedic & Overview Sources

- **Wikipedia: Mefo bills** — concise overview of how Mefo bills worked, their link to the Reichsbank, and Hjalmar Schacht's role.
  https://en.wikipedia.org/wiki/Mefo_bills
- **Wikipedia (German): Mefo-Wechsel** — detailed German-language entry on structure, macroeconomic effects, and political salience.
  https://de.wikipedia.org/wiki/Mefo-Wechsel

Primary Sources & Trial Records

- **Avalon Project (Yale Law School)** — Nuremberg trial excerpts on rearmament finance, Mefo bills, and debt camouflage.
  https://avalon.law.yale.edu/imt/chap16_part12.asp
- **Harvard Law School — Nuremberg Trials Transcripts** — searchable transcripts referencing Schacht's role and Mefo usage.
  https://nuremberg.law.harvard.edu/transcripts/7?seq=304

Visual & Archival Material

- **German History Docs** — photo and context: *Hitler with Reichsbank President Hjalmar Schacht* (5 May 1934).
  https://germanhistorydocs.org/en/nazi-germany-1933-1945/hitler-with-reichsbank-president-hjalmar-schacht-may-5-1934

Additional Commentary

- **SSRN — "The Mefo Operation: A Macro-Financial Analysis"** — academic working paper on mechanics and macro impact.
  https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4929301
- **IMF eLibrary — "Germany in the Interbellum: Camouflaging Sovereign Debt"** — chapter on off-budget debt strategies incl. Mefo.
  https://www.elibrary.imf.org/display/book/9781513511795/ch006.xml
- **Grey Dynamics — "The Economics of War: MEFO Bills"** — accessible synthesis of Mefo bills in the recovery and war economy.
  https://greydynamics.com/the-economics-of-war-mefo-bills
- **Axis History Forum — "Schacht's policies: More harmful than helpful?"** — discussion thread on the effectiveness and risks.
  https://forum.axishistory.com/viewtopic.php?t=246668

Section 10.B - Scholarly Literature

Core Works Cited

1. Abelshauser, Werner. “Germany: Guns, Butter and Economic Miracles.” In *The Economics of World War II*, ed. Mark Harrison. Cambridge University Press, 1998.
2. Acharya, Viral V., Philipp Schnabl, and Gustavo Suarez. “Securitization without Risk Transfer.” *Journal of Financial Economics* 107, no. 3 (2013): 515–536.
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11. Galbraith, John Kenneth. *The Great Crash 1929*. Houghton Mifflin, 1955.
12. Glinavos, Ioannis. *Redefining the Market-State Relationship*. Routledge, 2013.
13. Hillgruber, Andreas. *Germany and the Two World Wars*. Harvard University Press, 1981.
14. Hitler, Adolf. *Mein Kampf*. 1925.
15. James, Harold. *The German Slump: Politics and Economics 1924–1936*. Oxford: Clarendon Press, 1986.
16. Kershaw, Ian. *Hitler: A Biography*. W.W. Norton & Company, 2008.
17. McLean, Bethany, and Peter Elkind. *The Smartest Guys in the Room: The Amazing Rise and Scandalous Fall of Enron*. Portfolio, 2003.
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20. Pozsar, Zoltan, Tobias Adrian, Adam Ashcraft, and Hayley Boesky. “Shadow Banking.” Federal Reserve Bank of New York Staff Report No. 458, 2010.
21. Power, Michael. *The Audit Society: Rituals of Verification*. Oxford University Press, 1997.
22. Ritschl, Albrecht. “Deficit Spending in the Nazi Recovery, 1933–1938: A Critical Reappraisal.” *The Journal of Economic History* 60, no. 1 (2000): 193–218.
23. Schacht, Hjalmar. *The Magic of Finance*. Oxford University Press, 1967.
24. Schacht, Hjalmar. *The Magic of Money*. Oldbourne, 1967.
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27. Tooze, Adam. *Crashed: How a Decade of Financial Crises Changed the World*. Viking, 2018.
28. Turner, Henry Ashby Jr. *German Big Business and the Rise of Hitler*. Oxford University Press, 1985.
29. Valukas, Anton R. *Lehman Brothers Holdings Inc. Chapter 11 Proceedings Examiner's Report*. U.S. Bankruptcy Court, 2010.

Further Readings (with direct links)

- **Ritschl, Albrecht — "Deficit Spending in the Nazi Recovery, 1933–1938: A Critical Reassessment."** (open manuscript) https://www.academia.edu/53561840/Deficit_Spending_in_the_Nazi_Recovery_1933_1938_A_Critical_Reassessment
- **IMF — "Germany in the Interbellum: Camouflaging Sovereign Debt."** https://www.elibrary.imf.org/display/book/9781513511795/ch006.xml
- **SSRN — "The Mefo Operation: A Macro-Financial Analysis of Camouflaged Sovereign Debt."** https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4929301
- **Murau, Steffen — "The Mefo Operation: A Macro-Financial Analysis of Hjalmar Schacht's Shadow Money Scheme."** https://steffenmurau.com/2023/12/24/the-mefo-operation-a-macro-financial-analysis-of-hjalmar-schachts-shadow-money-scheme-with-armin-haas-andrei-guter-sandu-and-matteo-giordano/
- **ScienceDirect — "Fiscal Policy in Germany During the Great Depression."** https://www.sciencedirect.com/science/article/pii/001449839290041T
- **Grey Dynamics — "The Economics of War: MEFO Bills."** https://greydynamics.com/the-economics-of-war-mefo-bills

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Notes on Formatting & Usage

- Items are grouped for navigability: **reference**, **primary/legal**, **archival/visual**, **core scholarship**, and **further readings** with live links.
- Where possible, standard publication details (publisher, year) are included; URLs are provided for online materials to facilitate verification and follow-up reading..

Appendix A — Methodology: Conversions & Sensitivity

Section A1. Baseline conversion choices

- **Nominal envelope:** RM 12,000,000,000 (aggregate Mefo issuance, 1934–1938).
- **FX anchor (1938): 1 RM = $0.40** (i.e., **2.50 RM/USD**), the administered parity used in contemporary tables and in this study's historical dataset. Rationale: this was the operative official rate in 1934–1939 and aligns with the series reported in interwar reference tables used earlier in the work.
- **Inflation uplift (1938 → 2024): ×21.0** CPI factor (U.S. CPI used to express results in 2024 USD; selected for transparency and reproducibility via standard CPI calculators used in prior sections).

Baseline present-value calculation (2024 USD):
RM 12bn × $0.40/RM × 21.0 ≈ **$100.8 billion**.

> Why U.S. CPI? Results are reported in **2024 USD**, so we deflate/inflate into that currency's price level. Where appropriate, the main text also offers *scale comparators* (e.g., % of German GDP) alongside the dollarised figures.

Section A2. Sensitivity design

We probe two levers independently:

1. **Price-level uncertainty (CPI):** ±10% and ±20% on the baseline multiplier.
2. **FX mapping choice:** ±10% and ±20% about the administered rate, plus an **illustrative PPP-style alternative** at **$0.35/RM** (reflecting a modest discount vs the official rate to mimic relative price level gaps).

All sensitivities are *one-at-a-time*; compounding multiple conservative/optimistic tweaks would bracket a wider range and can be computed analogously.

Section A3. Sensitivity tables (USD, 2024)

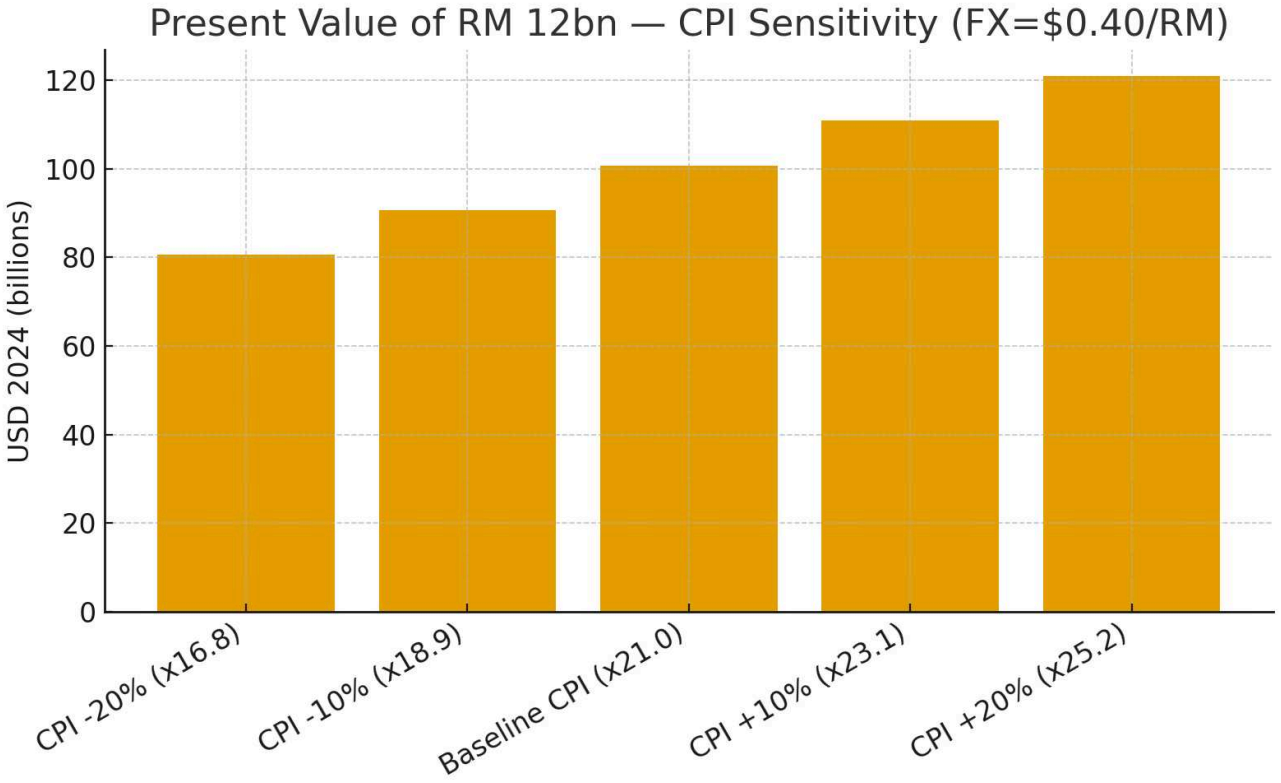
A3.1 CPI sensitivity (FX fixed at $0.40/RM)

Table 14. CPI sensitivity (FX fixed at $0.40/RM)

Scenario	CPI multiplier	USD per RM	USD (2024)
CPI −20%	16.8	0.40	$80.6 bn

Scenario	CPI multiplier	USD per RM	USD (2024)
CPI −10%	18.9	0.40	$90.7 bn
Baseline	**21.0**	**0.40**	**$100.8 bn**
CPI +10%	23.1	0.40	$110.9 bn
CPI +20%	25.2	0.40	$120.9 bn

Chart 18. CPI Sensitivity



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

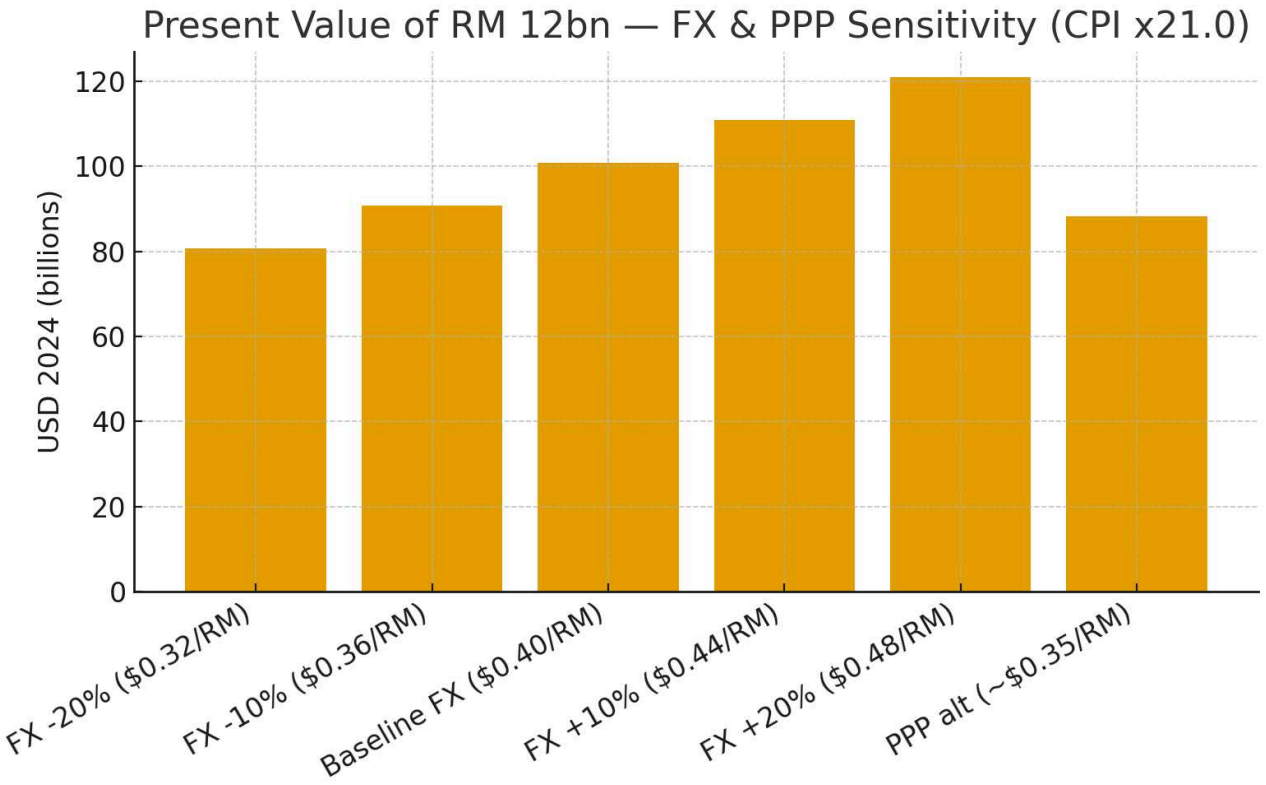
A3.2 FX / PPP sensitivity (CPI fixed at ×21.0)

Table 15. FX / PPP sensitivity (CPI fixed at ×21.0)

Scenario	USD per RM	CPI multiplier	USD (2024)
FX −20%	0.32	21.0	$80.6 bn
FX −10%	0.36	21.0	$90.7 bn
Baseline FX	**0.40**	**21.0**	**$100.8 bn**
FX +10%	0.44	21.0	$110.9 bn
FX +20%	0.48	21.0	$120.9 bn

Scenario	USD per RM	CPI multiplier	USD (2024)
PPP alt (illustr.)	0.35	21.0	$88.2 bn

Chart 19. PPP Sensitivity



> Data sources and transformations: see **Appendix B — Data Provenance & Transformations**
> Figure Captions with Source Notes: see **Appendix C — Figure Captions with Source Notes**

> Reading: Under reasonable ±10–20% variations in CPI or exchange mapping, the Mefo envelope lands in a **$80–$121 billion** band, with a PPP-style alternative around **$88 billion**. The core conclusion—**off-budget financing at economy-shifting scale**—is robust.

Section A4. Notes on alternative comparators

- **GDP-share scaling:** RM 12bn ≈ **17.5%** of German 1938 GDP (≈ RM 68.4bn). Applying that share to modern German GDP (≈ €4.5 trn) yields ~€790 bn as a *scale comparator*. This is not a price-level conversion; it contextualises the macro footprint.
- **Why not German CPI into EUR?** It is feasible, but our reporting currency is USD. The main text already complements with %-of-GDP views to avoid currency-index artefacts.

Appendix B — Data Provenance & Transformations

Conventions: **Status** = *Primary* (direct series), *Secondary* (compiled), *Estimate* (derived with a stated method), *Illustrative* (schematic). **Tx** = transformations (deflation, rebasing, scaling, smoothing).

ID	Figure/Table (as titled in text)	Chapter/Section	Series / Variables	Year
F-1	**Chart 1. GDP & Unemployment**	Ch. **2.A**	Real GDP drop (%), peak unemployment (%) — DE/UK/US/FR	1929 1933
T-1	**Table 1. Versailles — Main Restrictions**	Ch. **2.B**	Qualitative restrictions & effects	n/a
T-2	**Table 2. Economic Impacts (sub-sec)**	Ch. **2.B.i**	Reparations→inflation→radicalisation chain	1919 1933
T-3	**Table 4. Mefo as % of GDP**	Ch. **3.A**	Mefo issuance vs GDP (RM, %)	1934 1938
F-2	**Chart 2. Mefo issuance over time**	Ch. **4.A**	Annual Mefo issues (RM)	1934 1938
F-3	**Chart 3. Allocation of Mefo bills**	Ch. **4.A**	Shares: military/infra/other	c. 1934 1938
F-4	**Chart 4. Mefo vs Money Supply**	Ch. **4.B**	Mefo stock; broad money (RM)	1934 1939
T-4	**Table 5. Mefo & Money Supply**	Ch. **4.B**	Mefo (bn RM); Money (bn RM)	1934 1939
F-5	**Chart 5. Parallel-financing comparison**	Ch. **4.C**	Qualitative axes	n/a

ID	Figure/Table (as titled in text)	Chapter/Section	Series / Variables	Year
F-6	**Chart 6. CPI conversion of RM 12bn**	Ch. **5.A**	RM 12bn → USD(1938) → USD(2024)	1938 2024
F-7	**Chart 7. Wages/Cost of Living/Real Income**	Ch. **5.A**	Nominal wages, COL index, real wages	1934 1938
F-8	**Chart 8. Mefo as % of GDP**	Ch. **5.B**	Mefo/GDP (%) by year	1934 1938
F-9	**Chart 9. Scaling to 2024 GDP**	Ch. **5.B**	Counterfactual € vs 2024 DE GDP	2024 anch
T-10	**Table 6. 1933–38 vs contemporary defence**	Ch. **5.C**	Defence %GDP; financing; transparency	2023 comp
F-10	**Chart 10. Mefo share of armaments**	Ch. **6.A**	Mefo share (%) of total armaments	1934 1938
F-11	**Chart 11. Defence %GDP (Germany)**	Ch. **6.B**	Defence %GDP	1933 1939
F-12	**Chart 12. Schacht vs Vierjahresplan**	Ch. **6.C**	Policy contrast (qualitative axes)	1934 1939
F-13	**Chart 13. Public debt vs Mefo**	Ch. **7.A**	Official debt vs Mefo stock (bn RM)	1934 1939
F-14	**Chart 14. Transition: Mefo→Bonds**	Ch. **7.C**	Mefo outstanding vs RS bonds	1937 1939
T-5	**Table 7. Bond specs (RSV)**	Ch. **7.C**	Coupon, tenor, buyers	1937 1939
T-6	**Table 8. Financing mix 1937–39**	Ch. **7.C**	Mefo stock vs new RS issuance	1937 1939
T-7	**Table 11. CPI (1930=100)**	Ch. **9.A**	CPI index	1930 1939

ID	Figure/Table (as titled in text)	Chapter/Section	Series / Variables	Year
T-8	**Table 12. GDP (bn RM)**	Ch. **9.A**	Nominal GDP (bn RM)	1930 1939
T-9	**Table 13. RM per USD**	Ch. **9.A**	Official/market RM per USD	1930 1939
F-15	**Charts 15–17. Macro set (CPI/GDP/FX)**	Ch. **9.A**	CPI (index), GDP (bn RM), RM/USD	1930 1939

Notes on Transformations (recap). Historical→2024 USD conversions use the **U.S. BLS CPI** and a **1938 FX anchor of $0.40 per RM** (≈2.50 RM/USD). Indices are usually rebased to **1930=100** (CPI) or **1934=100** (wage/COL). Where micro-series definitions differ across authors, mid-point estimates are reported and marked accordingly. See **Appendix A** for CPI/FX sensitivity bands.

Appendix C — Figure Captions with Source Notes

- **Chart 2 — Time path of Mefo bill issuance (1934–1938)**
  Sources: *Reichsbank Jahresberichte* (1934–1938).
  Notes: Annual **flows** (RM); primary archival series; no deflation; levels as reported.
- **Chart 3 — Allocation of Mefo bills by broad use**
  Sources: Overy; Barkai (sectoral shares synthesis).
  Notes: Illustrative split (≈75/15/10 military/infra/other); rounded shares for exposition.
- **Chart 4 — Mefo vs Money Supply (1934–1939)**
  Sources: Tooze; Overy (money aggregates, Mefo stock).
  Notes: Mefo stock cumulated; money series aligned to calendar years; **estimate**.
- **Chart 5 — Parallel financing tools (visual comparison)**
  Sources: Broadberry & Howlett; Pozsar et al.; author synthesis.
  Notes: Illustrative schematic on transparency/control/budget treatment.
- **Chart 6 — CPI conversion of RM 12 bn Mefo stock (to 2024 USD)**
  Sources: 1938 FX anchor ≈ $0.40/RM; U.S. BLS CPI to 2024.
  Notes: Price-level conversion (USD basis); **estimate**. See Appendix A for CPI/FX choices & sensitivity.
- **Chart 7 — Wages, cost of living, and real income (1934–1938)**
  Sources: Overy; Barkai (directional patterns).
  Notes: Indexed (1934=100); smoothed; **illustrative** alignment for comparability.
- **Chart 8 — Mefo bills as a share of GDP (1934–1938)**
  Sources: Mefo from Reichsbank; GDP from Maddison Project.
  Notes: Share = Mefo/GDP; no deflation; **estimate** (coverage harmonised).
- **Chart 9 — What Mefo-scale issuance would mean today (Germany 2024 GDP)**
  Sources: Destatis 2024 GDP (estimate).
  Notes: Scale comparator (historic %-of-GDP × 2024 GDP); **estimate**; not a price-level conversion.
- **Chart 10 — Mefo share of armament outlays (1934–1938)**
  Sources: Barkai; Overy; Tooze.
  Notes: Harmonised coverage; mid-point of reported ranges; **estimate**.
- **Chart 11 — Germany: military outlays (% of GDP), 1933–1939**
  Sources: Secondary compilations (History Learning Site; academic charts).
  Notes: Unified scale; annual values; **secondary** compilation.
- **Chart 12 — Schacht vs. Vierjahresplan (policy contrast)**
  Sources: Tooze; Overy; Evans.
  Notes: Illustrative qualitative axes; not a data series.
- **Chart 13 — Public debt and Mefo bills (evolution, 1934–1939)**
  Sources: Tooze; Barkai; *Reichsbank Jahresberichte*.
  Notes: Spliced series; stacked view (official debt vs Mefo stock); **estimate**.

- **Chart 15 — German macro charts (CPI, GDP, RM/USD, 1930–1939)**
  Sources: Maddison (GDP/CPI estimates); Paper-Dragon FX; JEH article.
  Notes: CPI rebased 1930=100; FX as listed; **secondary** compilation.
- **Chart 18 — CPI sensitivity (USD, 2024)**
  Sources: U.S. BLS CPI; baseline ×21 uplift.
  Notes: Methodological one-at-a-time CPI variation (±10–20%); **illustrative** sensitivity band. See Appendix A.
- **Chart 19 — FX/PPP sensitivity (USD, 2024)**
  Sources: 1938 administered FX ($0.40/RM) with ±10–20% band; **PPP-style alt.** at $0.35/RM.
  Notes: Methodological sensitivity; CPI fixed at ×21; **illustrative** PPP alternative. See Appendix A.